

## **CHAPTER-1**

### **ICT @ School Scheme : An Overview**

#### **1.0. Background of Revised ICT Scheme:**

The scheme of Educational Technology (ET) was started in 1972 during the 4<sup>th</sup> Five Year Plan (FYP). Under the scheme 100% assistance was given to 6 State Institutes of Educational Technology (SIET) and the States/UTs were assisted for procurement of radio cum cassette players and colour TVs. Further, in recognition of the importance of role of ICT in education, the Computer Literacy and Studies in Schools (CLASS) Project was introduced as a pilot project in 1984-85 with the use of BBC micros. The project was adopted as a centrally sponsored scheme during the 8<sup>th</sup> FYP (1993-98) and its scope was widened to provide financial grants to educational institutions and also to cover new Government and Government aided secondary and higher secondary schools. The use and supply of software was limited with coverage confined only to higher secondary schools.

The National Task Force on Information Technology and Software Development (IT Task Force), constituted by the Prime Minister in July, 1998 made specific recommendations on introduction of IT in the education sector including schools for making computers accessible through the Vidyarthi Computer Scheme, Shikshak Computer Scheme and School Computer Schemes. Smart schools were recommended on a pilot basis in each state for demonstration purposes. It was also stipulated that 1 to 3% of the total budget was to be spent on provision of computers to all educational Institutions up to secondary and higher secondary level during the next five years.

Based on the experience gained so far, a need for a revision of the scheme of ICT @ Schools was felt to expand the outreach of the scheme to cover all Government and Government aided secondary and higher secondary schools in the country with emphasis on educationally backward blocks and areas with concentration of SC, ST, minority and weaker sections. Along with that, there is a need for ensuring dependable power supply where the electricity supply is erratic and internet connectivity, including broadband connection.

### **1.1 Major Recommendations of Various Workshops on ICT Conducted by MHRD:**

The key recommendations of various workshops conducted by MHRD during 2004-09 related to ICT and computer aided learning in schools can be summarized as follows:

- a) Setting smart schools:** There is a need to set up smart schools at the district level to serve as demonstration models for neighboring schools.
- b) Teacher engagement and better in-service and pre-service training:** Since ICT education will be imparted to all secondary and higher secondary students, an exclusive ICT teacher is required for each school. Similarly, there is a need for pre service as well as in service training of all teachers in effective use of ICT in teaching and learning process.
- c) Development of E-content:** There is also a need to develop and use appropriate e-content to enhance the comprehension levels of children in various subjects.
- d) Monitoring:** A strong mechanism for monitoring and management needs to be set in place at all levels for ensuring optimal delivery of set targets. The scheme envisages that the school management committee, parents' teachers association and local bodies would be involved in the programme management along with the setting up of an online web based portal for real time monitoring and transparency. In addition, independent monitoring and evaluation need to be envisaged.

## **1.2. Major Components of the Revised ICT @ School Scheme (2010)**

Accordingly, the scheme has been revised, with the approval of Cabinet Committee on Economic Affairs (CCEA) on 9th January 2010, for implementation during the remaining period of 11th Plan. The major components of the scheme as per revised ICT @ school scheme (2010) are:

1. Partnership with State Governments and Union Territories Administrations' for providing computer aided education to secondary and higher secondary Government and Government aided schools
2. Covering all Government and Government aided secondary and higher secondary schools by ICT by giving priority for early coverage of schools in educationally backward blocks and in areas having concentration of SC/ST/minority/weaker section.
3. Provision for engagement of an exclusive computer teacher in each secondary and higher secondary school, capacity enhancement of all teachers in ICT to enable them to impart ICT enabled teaching and a scheme for national ICT award as a means of motivation.
4. Strengthening of SIETs (State Institute of Education Technology) to contribute to e-content development. Development of a e-content, mainly through Central Institute of Education Technologies (CIET), six State Institutes of Education Technologies (SIETs) and 5 Regional Institutes of Education (RIEs), as also through outsourcing.
5. Management, monitoring and evaluation through ICT will be strengthened. Convergence with the existing programme would be essential especially in teacher training and ensuring reliable power supply and internet connectivity.

([http://www.teindia.nic.in/e9tm/Files/ICT\\_Documents/ICTatSchoolsScheme.pdf](http://www.teindia.nic.in/e9tm/Files/ICT_Documents/ICTatSchoolsScheme.pdf))

### **1.3. An overview of the provisions under ICT scheme in India:**

In the revised ICT @ Schools Scheme it is the mission to bring all Government and. Government secondary and higher secondary schools under the ambit of the scheme. Priority would be given to educationally backward blocks and areas with concentration of SC, ST, minority and weaker sections. The various provisions under Ict@ School scheme are summarised as follows:

#### **1.3.1 Infrastructure:**

In ICT@ School Scheme the provisions related to infrastructure are made in all schools. The recommendations on minimum infrastructure to be provided in each school are as follows:

1. **Hardware and software:** Each school would be provided with 10 PCs or 10 nodes connected through a server. Accessories like printers, projection system, etc will also be provided. Keyboards would be customized for use in the regional languages.
2. **Connectivity:** The first priority would be to have a broadband internet connection of at least 2 MBPS bandwidth in each school. Wherever that is not possible, connection of lower bandwidth would be provided with plan t upgrade in future. Wireless links would also be explored.
3. **Power Supply:** Wherever the power supply is unreliable, it is proposed to provide assistance for purchase of a generator, as a backup only and also its recurring cost, subject to a maximum of Rs.1000 per month, in addition to Rs.1000/- per month for the electricity charges. In areas where there is no power supply, solar generated power should be made use of.
4. **Computer Room/Lab:** The computers would be installed in one of the safe rooms in the school. If such rooms are not available, the need can be met from the scheme Rashtriya Madhyamik Shiksha Abhiyan (RMSA) in case of Government schools.

### **1.3.2. Central Funding Pattern:**

Under the class component of the Revised ICT scheme, the Union Government would provide 75% of financial assistance to State/UTs. The balance 25% of funds would be contributed by the State Governments/UTs. Assistance shall be provided to Northern East States, including Sikkim, in the ratio of 90:10. Each school is given under Non- Recurring Expenditure - 10 PCs (or one Server with 10 Terminals), 1 Projector, 1 Printer, 1 Scanner, 1 Web Camera, 1 modem, Broadband antenna, Generator/ Solar Package, UPS, video camera, Operating System & Application Software and budget for training of teachers etc.; and in recurring expenditure Computer Stationery (Printer cartridges, CD-ROMs, floppies, paper, etc); Electricity charges @ Rs. 1,000/- p.m.; Expenses on Diesel /Kerosene for generator @ Rs. 1,000/- p.m.; Telephone charges @ Rs. 500/- p.m.; Internet / Broadband charges; Teachers' salary @ Rs. 10000/- p.m.; budget for refresher training of teachers and for Management, Monitoring and Evaluation of ICT scheme. An overall maximum limit of Rs.9.10 lakh per school {Rs.6.40 lakh (non-recurring) and Rs.2.70 lakh (recurring)}. The Central Government's share would be restricted to Rs.6.63 lakh per school {Rs.4.80 lakh per school (non-recurring) and Rs.1.83 lakh per school (recurring)} for general category States and Rs.7.19 lakh per school {Rs5.76 lakh non-recurring and Rs.1.43 lakh per school recurring} for NE States, including Sikkim.

### **1.3.2 Mode of Implementation (Boot Vs Outright Purchase):**

States would be encouraged to implement the programme through a BOOT model under which the supplier would make available the ICT infrastructure for the duration of the contract period (normally five years) on the basis of a service level agreement and assurance of a periodic payment subject to satisfactory maintenance. The release of Central assistance in that case would be spread over the contract period.

In exceptional cases where such arrangements are difficult to implement, ICT infrastructure can be procured on 'Outright Purchase Basis'. The State/UT Govt. shall be free to partner with private organizations or integrate it with

other similar schemes for implementation of the 'ICT in schools' scheme including providing for maintenance. The direct procurement of hardware by the State would be last resort.

### **1.3.3. Establishment of Smart Schools**

Each State Government/Union Territory would convert one school per district into a smart school to serve as role model and to share the infrastructure and resources with the neighbourhood schools also subject to availability of funds. A grant of Rs.25 lakhs would be given per smart school. In smart schools, the emphasis would not only be on the use of Information Technology but also on the use of skills and values that will be important in the next millennium. It is hoped that at least one section (of 40 students) in each of the classes IX – XII will be fully computerized. Thus a school having 160computers @ 40 computers for each IX to XII classes may be called a smart school under the scheme. However, keeping in view the fact that this target cannot be achieved in one go, it is proposed to provide 40 computers to such identified schools.

### **1.3.4. Appointment of ICT teachers and formulation of curriculum for computer literacy**

The objective of the ICT @ school scheme is to make all students IT literate. This would involve formulation and transaction of curriculum and syllabus on computer literacy for each of the classes from IX to XII. Firstly, a dedicated ICT teacher would be required in each school. Secondly, all Examination Boards in the country would be encouraged to offer computer-related subjects as electives at the higher secondary stage. This scheme would encourage individual schools to offer such electives, so that a large manpower with IT skills can be built up in this country. The following options for engagement of teachers for IT literacy and competency teaching are suggested for adoption by the States:

- It would be necessary to have dedicated and suitably qualified teacher for computer education in each secondary school. It would

not be possible for other subject teachers to teach computer literacy to high school students

- If a school has higher secondary stage, then a post graduate teacher in computer science may be appointed if computer related subject(s) is (are) offered as elective(s).
- To start with, such teachers may be appointed on contract basis with a remuneration not exceeding Rs. 10,000 per month and this will be part of the scheme. If one school does not justify a full time teacher, one teacher may be appointed for 2 schools and time table may be so arranged that the teacher can spend half the week in each school. The qualification of the teacher teaching higher secondary stage should be adequate.
- If the school has both secondary and higher secondary stage, then the teacher meant for higher secondary classes would also teach ICT in secondary classes (class IX and X) students.
- If the school has only secondary (IX-X) and no higher secondary (XI-XII) stage, then a dedicated and qualified teacher is required on contract basis to teach ICT. In this case, the ceiling for monthly remuneration would be Rs. 500 per month. If full time work is not possible in one school, one teacher may be appointed for a group of 2 schools, taking care to arrange time tables so as to enable the teacher to spend half of the week in each school.
- The computer teacher will also be in charge of all ICT facilities in the school in general. He/ she will also coordinate in-service ICT training for all subject teachers in the school to enable them to use ICT in their day-to-day teaching of subjects.
- Wherever if it is found expedient, instead of contract teachers for IT for classes IX and X, provision of a qualified teacher can be made as part of 'BOOT model' agreement, so that the service provider makes arrangement for a qualified teacher. In such cases the total outlay per school would be enhanced to the extent of Rs 5000 per month or Rs 60000 per year for a five year period.

#### **1.3.4. Teachers' Training:**

It will be mandatory for all teachers to undergo in-service training in use of ICT in teaching; and also during the pre-service training courses meant for secondary teachers. The National Council for Teachers Education shall be associated with the scheme in the context of training of teachers in computer-aided learning. The Rehabilitation Council of India would play an important role in projects involving introduction of use of technology for the education of children with special needs. In pre-service training on ICT should be provided for 55 hours. For in-service training in first time induction training in ICT should be provided to all teachers in the sanctioned schools for a period of 10 days (8hours per day) @ Rs. 400/- per teacher. The trainings would be organized by the respective State Governments in convenient batches at the SCERTs or such other training institutions as the State Governments finds suitable. The Refresher Training in use of ICT in teaching should be provided to all teachers of the sanctioned schools every year for 5 days (8 hours per day) @ Rs.400/- per day per teacher.

#### **1.3.5. National Award for the Teachers using ICT for Innovations in Education:**

In order to motivate teachers and teacher educators to use ICT in school education in a big way it is proposed to institute National Awards for the Teachers using ICT to be given away every year on the National Education Day(11th November).

#### **1.3.6. Development of E-Content:**

Development of the appropriate e-content and its persistent and effective use constitutes the core of this proposed scheme. This task would be shared by Central Institute of Educational Technology (CIET), State Institutes of Educational Technology (SIET), Regional Institutes of Education (RIE) of the National Council for Educational Research & Training (NCERT), Institutes of repute having experience of education and development of e- content and other wings of central and State Governments as required. Outsourcing to private sector in a transparent manner may also be done. National and State level



committees should also be set up to assess the nature of e content to be developed to enhance the learning capabilities of the secondary school children. There would be stress on development of e- content and building of repository of e- content & dissemination of best practices.

### **1.3.7. Programme Management Structure:**

With the increase in the mandate and outreach of the scheme, an appropriate management structure is needed at the national, state and district levels for management, monitoring and evaluation. A separate budget is there for at the national level and the provision would be used for the purpose of monitoring, evaluation, research, innovation, seminar, workshops, visits, office expenses, and consultancy. At the State level the provision would be utilized for undertaking external impact assessment studies at State, District and school levels to make course corrections and for meeting expenses on the staff salary at State level and District level.

- **State Level:** The overall responsibility of the programme at the State level shall rest with Principal Secretary/Secretary in charge of the programme. A cell, headed by an officer not below the rank of District Collector, having sufficient experience in the sector, will manage the programme implementation. The support staff for the cell would be engaged on contract basis.
- **District Level:** A cell headed by an officer with adequate seniority and relevant experience will oversee the implementation of the programme in all secondary and higher secondary schools in the district. The cell would monitor the programme and also maintain all records including periodic financial and physical reports to be sent to the State for onward transmission to the Ministry.
- **School Level:** The head of the school assisted by the computer teacher would be responsible for the school-level implementation. The School Management Committee, the Parents Teacher Association and the local bodies would be fully involved. All efforts would be made to make the school an information hub for the community. The facilities can be used outside the school hours for

the benefit of the community so that optimal utilisation of the ICT infrastructure takes place while enabling revenue generation.

### **1.3. ICT@ School Scheme: A Dynamic Model of School Education:**

The objective of the ICT @ school scheme is to make all students IT literate, so, that a large manpower with IT skills can be built up in this country; and to integrate technology in the teaching learning process. No doubt, the provisions made in ICT@ School Scheme are dynamic one to provide good IT infrastructure in each school. Establishing smart schools to serve as role model and to share the infrastructure and resources with the neighbourhood schools is the initiative to make technology based education for Govt. school students. Formulation of curriculum for ICT is really an innovative idea to develop IT skills among the future generation. To provide grants for the appointment of a dedicated ICT teacher and encouraging all Examination Boards in the country to offer computer-related subjects as electives at the higher secondary stage is a step to develop IT professional of the future. The involvement of NCTE for pre-service training in ICT and promotion of ICT training during in-service is an appropriate measure to make the teachers computer savvy. In order to motivate teachers and teacher educators to use ICT in school education in a big way it is proposed to institute National Awards for the Teachers using ICT to be given away every year on the National Education Day. The development of appropriate e-content and its persistent and effective use constitutes the core of this proposed scheme. With the increase in the mandate and outreach of the scheme, an appropriate management structure is made functional at the national, state and district levels for management, monitoring and evaluation. Capacity building of teachers in IT and skill development of students in IT is the core objective and a dynamic preposition of the scheme.

### **1.5. Objectives of Evaluation:**

As per the Terms of Reference for the Third Party Evaluation of the Information and Communication Technology (ICT) in School Scheme in the schools of Mizoram. The objectives of this study on evaluation of ICT Scheme in schools are as under:

1. The core objective of undertaking evaluation is to assess the:
  - a) Relevance of the project
  - b) Benefits derived from the project (Impact)
  - c) Whether benefits will continue after the project ends (sustainability)
  - d) The attainment of specific targets for key indicators (effectiveness)
  - e) The amount of effort and resource used (efficiency/ economy) and institutional development and sustainability;
2. The study is aimed at evolving a critical evaluation of the implementation of the ICT in School Scheme and its impact on overall use of ICT in School;
3. The objective of the study shall also examine the various Implementation Models;
4. Usage and skills to use ICT by various stakeholders such as Students, Teachers, School Head, Principal, DEO, State level authorities etc.;
5. Another objective of this study is to examine the impact of ICT on learning processes;
6. Usage of ICT in School Governance is another objective of this study.

## Chapter-2

### ICT @ School Scheme in Mizoram : An Overview

#### 2.0. Background of ICT Scheme in Mizoram

Mizoram has the second highest literacy rate in the country and it is therefore believed that Mizoram can also be one of the most IT literate states in the country which can further lead to a global center of excellence in IT Education, IT training, and software development Center. Under the Information and Technology @ School Scheme; it is expected to provide Information Technology infrastructure to every school in Mizoram and to introduce IT subject from the level of class III to XII as a compulsory subject.

As the government of Mizoram has encouraged utilization of Information Technology in High schools and Higher Secondary Schools, the Department of School Education has developed IT Curriculum to make IT as compulsory subject from the level of primary schools to higher secondary schools. In this connection, the following objectives are expected to be realized:-

1. To formulate Computer Education plan for integration of computer into the curriculum and to make IT a part of the schooling process.
2. To provide computer systems to every school and introduce IT subject as compulsory subject from the level of primary schools to Higher Secondary Schools.
3. To provide internet connectivity to every school in Mizoram through the Mizoram Education Networks (MEDNET).
4. To achieve total computer literacy among school students and build up the capacity of their knowledge.

5. To provide special teacher training programmes for faculty members of IT in schools so as to enable them to teach IT subject in schools efficiently.
6. To achieve total computer literacy among students at the different levels of school education

Under the revised CLASS Scheme of the Government of India, the State Government had introduced Computer Education in seven Higher Secondary Schools through a private firm known as Computer Enterprise, Zarkawt, Mizoram initially for a period of 2 years. The actual implementation of the scheme started from 1998-99. The total cost of the project had been Rs. 7, 23,520/- for one year i.e. @Rs. 1, 03,360/- per school, per year. The release of the payment was @ Rs. 1, 03,360/- per year. The scheme covering almost 1609 students had been satisfactorily implemented during the year.

The sources of fund had been made available from the Computer Literacy Scheme funded by the Government of India under the Revised CLASS Scheme and resources that had been made available by the State Government. As the success of the project has in its effective implementation, the issues of quality and standard had to be addressed. Keeping in view the existing infrastructure available and lack of experience of the school authority in this field, it was felt necessary that the initial responsibility should be given to outside agency and that at later stage, State Government was expected to take up the programme departmentally i.e. once more experience was gained and sufficient number of trained teacher trainers were found available.

Under these circumstances, a private implementing agency/body that had the expertise, capacity and ability, both technical and financial had been defined. With this end in view, a notice inviting proposals for running computer courses in the schools was published in the local newspapers. Thereafter, out of the reputed firms who responded, one firm was selected by the State Purchase Advisory Committee. The firm had implemented the Computer

Literacy Programme in 7 schools during the year 1998-99 under the Revised Scheme.

The State Government had provided the basic infrastructure in the schools with one adequate sized room with electricity connection. The firm had provided furniture, computer hardware and peripherals (colour monitors, printers, UPS etc.) licensed software, curriculum with course materials and learning resources, two instructors per schools, computer stationary etc. The client server set up (one server with nine clients per school) had been adopted.

### 2.1. ICT @ School Scheme

Under the ICT @ School Scheme, a Computer Education Plan based on the norms of the Scheme of Information and Communication Technology (ICT) @ Schools formulated by the Govt. Of India vide their letter no. F.27-1/2002-Sch.5 dated 27.7.2004 was submitted to Ministry of Human Resource Development, Department of Higher and Technical Education, Government of India. Based on the Computer Education Plan submitted by the State, the Ministry of Human Resource Development, Department of Higher and Technical Education, Government of India has sanctioned an amount of Rs 306.18 Lakh for imparting Computer Education in the State. Out of the sanctioned amount, Rs150 Lakh was released by the Government of India. From the Rs 150 Lakh released by the Government of India, ICT @ School Scheme was implemented in 30 numbers of school in the State. Detailed information on the implementation of the scheme along with expenditure and utilization certificate has been provided and attached in the format, forms and performa.

**Table 2.1**  
**Year-wise Detail of Schools covered under ICT in Mizoram**

<b>Type of School</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>Total</b>
Secondary School	30	–	–	99	18	171	<b>318</b>
Hr. Secondary School	–	–	–	1	19	10	<b>30</b>
<b>Total</b>	<b>30</b>	<b>–</b>	<b>–</b>	<b>100</b>	<b>37</b>	<b>181</b>	<b>348</b>

## **2.2. The Present Scenario**

A quick glance at Table-2.1 shows that the total number of High and higher Secondary schools covered till date (latest sanction in 2011-12) is 348 schools. As per the latest report received from SCERT, the scheme has been implemented through outright purchase basis. Up to 2011-2012, as many as 1348 teachers have already been given training and 15980 students have been covered under ICT scheme.

## **2.3. Teacher Training:**

All teachers are expected to be covered during the implementation of ICT in school scheme. Induction Training Module for High and Higher Secondary Teachers (Self Instructional Package) have been developed. The kinds of teacher training being organized were:

- a) Induction and Refresher training for in-service teachers.
- b) Training in Computer Basic, Integration of IT Tools and IT based Learning Resources in Curriculum Transaction.
- c) Orientation Programme for teachers as well as heads of the schools.

## **2.4. Recruitment of Teachers:**

After the Revised ICT@School Scheme, provision for recruitment of computer teachers had been made. Recurring cost of 10% state share had been provided by the State Government for recruitment of dedicated computer teachers during 2010 – 2011. However, matching share of recurring cost of 90% central share has not been released for recruitment of computer teacher till date.

## **2.5. Monitoring:**

State Level Monitoring Committee is being headed by Director, SCERT. At the district level, District Monitoring Group is headed by Principal, DIETs/DRCs and Principals/Headmasters of selected schools at the sub-divisional level. State Level Monitoring Team is expected to visit all the schools covered and to conduct physical verification as well as the infusion of ICT in

the teaching learning process. Reports are to be submitted quarterly by the District and Sub-Division Monitoring Groups.

## **2.6. Content Development:**

For developing content for ICT@School, two kinds of approaches were employed

### **a) Outsourcing to Private Firms:**

Hard-spots have been identified by teachers and teacher educators and private firms are preparing storyboards for each topic, and the same are being submitted to the Expert Committee on E-content for editing, scrutinizing and necessary modifications and suggestions before it is finalized.

### **b) Development by SCERT:**

E-content development activities are also being undertaken by the SCERT to make it more interactive through the guidance of the Expert Committee. Identification of hard spots for content in English, Science, Mathematics and Social Science are being finalized for development.

The Expert Committee on Content Development has been monitoring all these activities undertaken for development and finalization of e-content.

## **2.7. Smart School:**

Four Smart Schools are being established in the four districts of Mizoram by converting the existing State Government schools to serve as role models and to share the infrastructures and resources with the neighboring schools as soon as the Central share of fund for the purpose is revalidated during 2012-2013.



### **2.8. Evaluation:**

Reconstruction as well as construction of new school buildings are underway throughout the State. As a result of this, a number of schools have not been able to install the computers received by them. Evaluation of the scheme is now being done by the Evaluation Team from Mizoram University.

### **2.9. Internet Connectivity**

In internet connectivity, service providers have reached all the district capitals and nearby villages of the State capital, leaving schools in remote areas. The State Government ensured that the remote schools will be connected within five years after Power Grid Corporation of India connected the State of Mizoram.

## Chapter-3

### Methodology and Procedures

#### 3.0. Introduction:

The reliability, validity and generalizability of findings of any study, including assessment and evaluative studies, largely depend on the methodology adopted in the conduct of the study. The methodology here refers to the size of sample, sampling design, method of research, sources of data, tools used for data collection and statistical techniques for data analysis etc. Thus methodology chapter occupies an important place in any research study.

#### 3.1 Sample and Sampling Procedures:

Keeping in view the nature of this evaluative study the multistage sampling was adopted.

##### a) First Stage of Sampling:

First stage of sampling in this study was related to the selection of required number of district from the total districts in Mizoram. As per the TOR for *Evaluation of ICT @ School Scheme*, six districts were to be selected on the basis of the following criteria i.e. Urban district –1, Rural district– 1, District with high telephone-density– 1, District with lower telephone-density –1, District characterized as backward by the state – 1, and District with electricity problems -1. As there are only 8 districts in Mizoram of which 6 districts were to be selected, therefore there was a limited choice in the selection of districts by strictly adhering to aforesaid criteria. Despite this limitation the Evaluative Institute has taken every care in selection of districts as per the suggested criteria. The names of the selected districts and the criteria for their selection have been given in Table-2.1. The location of these

districts, with regard to their size, inter-district boundaries, boundaries with other Indian states and other countries can be seen from the Mizoram Map given in this chapter.

**Table 3.1**  
**Names, Criteria of Selection and Special features of Selected Districts**

<b>Sl. No.</b>	<b>Name of District</b>	<b>Selection Criteria</b>	<b>Special Features</b>
1	Aizawl	High telephone density	Has almost 1/3 of state population
2	Champhai	Rural district	Has a long international border on its eastern side with Myanmar
3	Kolasib	District with Electricity Problems	On its northern side has a border with Assam
4	Lawngtlai	Backward District	Has long international border on its western side with Bangladesh.
5	Lunglei	Urban district	Second largest district of Mizoram having international border in its western side with Bangladesh
6	Saiha	Districts with lower telephone-density	Has international border in its southern side with Myanmar

**b) Second Stage of Sampling:**

As per the TOR, every Evaluative Institute was required to select 10 schools from each of the selected districts. Thus, the second stage of sampling in this study was related to the selection of 10 Government or Aided High or Higher Secondary Schools from each of the selected 6 districts. In order to select the required number of schools a lists of all Government and Aided High or Higher Secondary Schools, covered under the ICT scheme, in selected 6 districts were availed from the concerned department, and the required number of schools from each district were selected by following purposive sampling design, so as to meet the following criteria of selection of schools specified in TOR : schools covered under ICT in School Scheme, schools with higher gender gap in enrolment, schools having higher proportion of ST/ Minority/ Weaker Section students, schools in the localities where problem of electricity connection and supply exists, schools in the localities where there is problem of 'no internet connectivity' or 'connectivity problem', and the schools

located in rural areas;. Thus, the total 60 schools i.e. 57 high schools and 3 higher secondary schools comprised the sample of this study. In terms of type of school management 52 were government schools and 8 were government aided schools. The district wise details of sample schools have been given in Table-2.3 to 2.5.

**Table 3.2**  
**Details of Sample Schools in Terms of Level, Management and Location**

District	Levels of Schools		Type of Management		Location	
	Secondary	Senior Secondary	Govt. Schools	Govt. Aided Schools	Rural	Urban
Aizawl	10	-	9	1	3	7
Champhai	10	-	10	-	7	3
Kolasib	9	1	9	1	6	4
Lawngtlai	10	-	10	-	7	3
Lunglei	9	1	10	-	3	7
Saiha	9	1	4	6	5	5
<b>Total</b>	<b>57</b>	<b>3</b>	<b>52</b>	<b>8</b>	<b>31</b>	<b>29</b>

**Table 3.3**  
**List of Sample High and Higher Secondary Schools from Aizawl and Champhai Districts**

Sl.No.	Name of Sample School from Aizawl District	Name of Sample School from Champhai District
1	Govt. Chaltlang H.S, Aizawl	Govt. Ruantlang H.S.
2	Govt. Mizo High School	Govt. Chawngtlai H.S.
3	Govt. High School, Lengpui	Govt. E/H/S Biate
4	Govt. Ch. Chhunga H.S.	Govt. Kelkang H.S.
5	Govt. Seling H.S.	Govt. Champhai H.S.
6	Govt. Dinthar H.S.	Govt. Ngur H.S.
7	Govt. Sairang H.S	Govt. Hnahlan H.S.
8	Govt. Tanhril H.S	Govt. R. Hranga H.S.
9	Govt. Thingsul Tlangnuam H.S	Govt. G.M. H.S.
10	Govt. Kulikawn H.S	Govt. Ruantlang H.S.

**Table 3.4**  
**List of Sample High and Higher Secondary Schools from Kolasib and Lawngtlai Districts**

<b>Sl.No</b>	<b>Name of sample School from Kolasib District</b>	<b>Name of Sample School from Lawngtlai District</b>
1	Govt. H.S., Kawnpui	Govt. H.S., Bualpui
2	St. John H.S.S	Govt. Lai H.S., Vawmbuk
3	Govt. Nisapui H.S.	Govt. Region H.S., Lawngtlai
4	Govt. P.M,H.S. Lungdai	Govt. Diltlang H.S., Lungdai
5	Govt. Vairengte H.S.	Govt. Lairam H.S.
6	Govt. Hartohi H.S.	Govt. Southern Public H.S.
7	Govt. Thingdawl H.S.	Govt. H.S., Sangau
8	Govt. T. Robert H.S Bilkhawhawtlir	Govt. H.S., Chandmari, Lawngtlai
9	Govt. Diakkawn H.S.	Govt. H.S., Chawngte 'P'
10	Govt. Kolasib H.S	Govt. H.S., Chawngte 'C'

**Table 3.5**  
**List of Sample High and Higher Secondary Schools from Lunglei and Saiha Districts**

<b>Sl.No.</b>	<b>Name of Sample Schools from Lunglei District</b>	<b>Name of Sample Schools from Saiha District</b>
1	Govt. Southern H.S., Hnahthial	Govt. H.S.S., New Saiha
2	Govt. Liantawna H.S.	Govt. High School, New Saiha
3	Govt. Venglai H.S., Lunglei	Govt. Saiha High School
4	Government H.S.,Zobawk	New Colony High School,
5	Govt. H.S, Pangzawl	Don Bosco High School
6	Govt. Bazar H.S	Govt. Bazar High School
7	Govt. Leitlang H.S.	Niawhtlang High School
8	Govt. H.S., Lunglei	Saiha Tlang Kawn High School
9	Govt. H.S, Zotlang	Maubawk High School,
10	Leitlangpui H.S.S.	Tuipang High school

**c) Third Stage of Sampling:**

As per the provisions of TOR, for this Evaluative Study of ICT Scheme @ School, the required information was to be collected from headmaster/principal, ICT teacher, subject teachers and students, through specific questionnaires/information schedules provided by the sponsoring agency. Therefore, there was no question of sampling in case of selection headmaster/principal, ICT teacher and subject teachers as there was no scope of selection by choice. However, there was requirement of sampling in the selection students from sample schools. Thus the third stage of sampling involved the selection of 2 students from each high school or higher secondary classes offered by the concerned school. It is pertinent to mention here that selection of students was done randomly by the teacher in-charge of the field work team. The details relating to the number of headmasters/principals, ICT teachers, subject teachers and students that were included in the sample of this evaluative study have been given in Table-2.6

**Table 3.6**  
**Sample of Headmasters, ICT Teachers, Subject Teachers and Students**

<b>Name of District</b>	<b>Sample of Head Masters</b>	<b>Sample of ICT Teachers</b>	<b>Sample of Subject Teachers</b>	<b>Sample of Students</b>
Aizawl	10	10	40	40
Champhai	10	10	40	40
Kolasib	10	10	40	40
Lawngtlai	10	10	40	40
Lunglei	10	10	40	40
Saiha	10	10	40	40
<b>Total</b>	<b>60</b>	<b>60</b>	<b>240</b>	<b>240</b>

**3.2 The Evaluation Framework:**

The information required for evaluation of the scheme was collected with the help of the provided five questionnaires/information schedules by a team of six field workers, including the nodal officer and a senior faculty from the department. All the members of field team were provided adequate training to

undertake the required field work. For convenience of recording field observations, the questionnaires/information schedules provided by the sponsoring agency were restructured to collect field data without making any change in their content. As the medium of instruction in all high and higher secondary schools in Mizoram is English, therefore, English version of the questionnaires, received from the sponsoring agency, were used even with students. As per the provisions in TOR, the Focus Group Discussions (FGDs) were organized in five schools in each district and their video recording were done by the field team. Besides, video recording still photographs and hand notes were also taken.

### **3.3 Tools for Data Collection:**

The following tools were used for data collection:

- a) An information schedule on ICT @ School scheme (to collect information from the state)
- b) An information schedule on ICT @ School scheme for District (to collect information from the district)
- c) An observation schedule to check the facilities in school available under ICT@ school scheme.
- d) A questionnaire for students to know attitude and capacity building towards ICT and computer skills of students.
- e) A questionnaire for teachers to explore the attitude and capacity building towards ICT usage, computer skills, integration of ICT in teaching by teachers and barriers for ICT integration in teaching and learning.
- f) A questionnaire for Principals/headmasters to collect information relating to infrastructure and their perceptions on various issues relating to the use of ICT tools.
- g) FGD's (Focus Group Discussions) with teachers, computer teachers and head teachers/ principals etc. was to understand their perspective of the implementation of ICT scheme in schools in Mizoram.

### **3.4 Sources of Data**

The study is based on collection of both primary and secondary data. While the primary data were collected through five Information Schedules provided by the sponsoring agency, the secondary data were collected from the office records of SCERT, Mizoram. Besides, documents such as ICT Scheme @ School were also consulted.

### **3.5 Procedure of Data Collection:**

The data was collected with the help of field investigators under the supervision and guidance of nodal officer and a senior faculty from the department. Interactions with various stakeholders such as Principal/ Head Teacher/ Teachers/ Students/ Administrative staff etc. were done. The Focus Group Discussions with Head Teacher, teachers, students and administrative staff was done and recorded in five schools in each of the six selected districts. The data were collected from the concerned respondents with the help of relevant questionnaires/ observation schedules.

### **3.6 Statistical Analysis of Data:**

Keeping in view the nature, objectives and type of field data generated by the study, the descriptive statistic techniques, namely, frequency distribution and percentage were used for analysis of data.



## Chapter-4

### ICT @ School Scheme in Mizoram : A Quantitative Assessment

#### 4.0. Quantitative Analysis:

This chapter deals with the analysis of quantitative data collected from headmasters/principals, ICT teachers, subject teachers and students with the help of questionnaire/information schedules provide by the sponsoring agency. The said field data relates to various aspects of ICT @School Scheme, such as availability of computers, printers, computer labs, generators for back up supply, internet connectivity, computer maintenance funds, ICT teachers, ICT syllabus, E- library; accessibility of computers to students and teachers during after school hours, status of use computer by students and teachers; headmasters' perceptions on ICT skills of teachers, teachers' perceptions on students' reactions & attitude towards ICT; appointment of ICT teachers, quality & duration of ICT training of ICT and subject teachers, slots on ICT education in school time table, availability of ROT/SIT facilities in schools, mechanisms for monitoring and supervision of ICT scheme, model for procurement of computers, etc.

The said data has been analyzed with the help of descriptive statistics, such as frequency count and percentages. As the data for this evaluative study was collected from four different types of respondents, therefore, the analysis and interpretation of data in this chapter has been presented in the following four sections corresponding to the respondents:

Section-1 : Analysis of Data Collected from Headmasters

Section-1 : Analysis of Data Collected from Subject Teachers

Section-1 : Analysis of Data Collected from Students

Section-1 : Analysis of Data Collected from ICT Teachers

## SECTION - I

### ANALYSIS OF DATA RELATING RESPONSES OF HEADMASTERS

#### 4.1 Basic Infrastructure

In order to have a complete picture of the sample schools, the availability of different facilities in the school was studied and analyzed which is presented in the Table-4.1. As per the information provided by the Headmasters and on the spot observation of the field investigators, it was found except for two districts, in majority of the schools, (more than 60%) in the rest of the districts, Computer Lab were available for ICT. Drinking water was available in majority of the schools in all the districts (70% in five of the districts covered and 100% in one of the districts). Toilet with water was available in only 40% of the schools in Lawngtlai District whereas it was available in 70% of the schools in Champhai, Kolasib and Saiha District. Lunglei district had 100% availability while it was 60% for Aizawl district. Playground was available in only in minority of the schools in Aizawl, Champhai, Lunglei and Lawngtlai District. Kolasib had 50% of the schools with playground while it was 70% in Saiha district. Electricity was reported to be reliable in 70% of the schools in Champhai, Kolasib, Lawngtlai and Saiha district. All the schools in Lunglei district reported reliable electricity while only 60% of the schools in Aizawl district reported to have reliable electricity. None of the schools in all the districts had solar power. Generator was available in only 10% of the schools in Saiha while Aizawl district and Kolasib district had 30% of the schools having Generator, 40% in Champhai and 60% both in Lawngtlai and Lunglei district had this facility. 10% of the schools in Lunglei had Inverter and 30% of schools in Saiha district reported the availability of Inverter in their schools. However, none of the schools in Aizawl, Champhai, Kolasib and Lawngtlai had Inverter in their schools. 10% of the schools each in Aizawl, Champhai, Kolasib and Lawngtlai reported the availability of Natural Gas in their schools while Lunglei and Saiha district reported non-availability. Landline telephone was available in 60% of the schools in Aizawl, 50% in Lunglei, 40% in Lawngtlai, 30% each in Kolasib and Saiha while only 10% of the schools had Landline Telephone in Champhai district. Mobile phone connection was available in only 10% of the

schools in Aizawl, 20% in Champhai, 30% each in Kolasib, Lawngtlai and Lunglei while the percentage was 50% in Saiha district. Fax facility was available in 10% each of Aizawl, Champhai and Kolasib while Lawngtlai and Lunglei had 30% of the schools with Fax facility and Saiha had 20% having this facility. Cable TV/WLL/DTH connection was available in as many as 70% of the schools in Lunglei district and 60% in Aizawl district. The percentage of schools having this facility was 40 in Lawngtlai, 30 in Champhai and 20 each in Kolasib and Saiha. Except for Lawngtlai district where SIT was available in 10% of the schools, none of the schools in the other districts had this facility. Receive Only Terminal (ROT) was available in 10% and 20% of the schools in Champhai and Lawngtlai district respectively while it was not available in any of the schools in the other four districts.

**Table 4.1**  
**Status of Basic Infrastructure Facilities in Sample Schools**

<b>Facilities</b>	<b>Aizawl</b>	<b>Champhai</b>	<b>Kolasib</b>	<b>Lawngtlai</b>	<b>Lunglei</b>	<b>Saiha</b>
Computer Lab	90%	60%	90%	30%	80%	40%
Drinking Water	70%	70%	70%	70%	100%	70%
Toilet with water	60%	70%	70%	40%	100%	70%
Playground	30%	20%	50%	30%	20%	70%
Reliable electricity	60%	70%	70%	70%	100%	70%
Solar Power	Nil	Nil	Nil	Nil	Nil	Nil
Generator Power	30%	40%	30%	60%	60%	10%
Inverter	Nil	Nil	Nil	Nil	10%	30%
Natural gas	10%	10%	10%	10%	Nil	Nil
Landline telephone	60%	10%	30%	40%	50%	30%
Mobile Phone	10%	20%	30%	30%	30%	50%
Fax machine	10%	10%	10%	30%	30%	20%
Cable TV/WLL /DTH	60%	30%	20%	40%	70%	20%
SIT	Nil	Nil	Nil	10%	Nil	Nil
ROT	Nil	10%	Nil	20%	Nil	Nil
Any other	Nil	Nil	Nil	Nil	Nil	Nil

## 4.2 External Support

The Table-4.2 shows the status of external support for technical training, onsite technical support and monitoring of ICT scheme in the sample schools visited for the study. A perusal of the Table-4.2 reveals that there was very low level of external support for technical training as well as infrastructural support. Only 10% each in Saiha and Champhai reported the availability of such support while the percentage was 20% each in Aizawl and Kolasib. None of the schools in Lunglei district had reported availability of this support. Provision of onsite technical support was reported by 30% of the schools in both Aizawl and Lawngtlai district, 10% each in Champhai, Kolasib and Saiha district and none (0%) in Lunglei district. As per the same information, Monitoring Mechanism for ICT Scheme was provided to 30% of the schools each in Aizawl, Kolasib and Lawngtlai district while the percentage was 10% in Champhai district. None of the schools (0%) in both Lunglei and Saiha district were provided such mechanism.

**Table- 4.2**  
**Status of External Support for Technical Training, Onsite Technical support, Monitoring of ICT Scheme**

<b>Facilities</b>	<b>Aizawl</b>	<b>Champhai</b>	<b>Kolasib</b>	<b>Lawngtlai</b>	<b>Lunglei</b>	<b>Saiha</b>
External Support for Technical training/ Infrastructural	20%	10%	20%	30%	Nil	10%
Provision of onsite technical support	30%	10%	10%	30%	Nil	10%
Provision of Monitoring Mechanism for ICT Scheme	30%	10%	30%	30%	Nil	Nil

## 4.3 Overall Capability of Staff

The Headmasters of the sample schools were asked to grade the overall ICT capability of their staff after training. The Table-4.3 is a presentation of the analysis of the responses of the sample Headmasters/Principals

From a perusal of the Table 4.3, it can be seen that only 5% of the teaching staff (10% each in Champhai, Lunglei and Saiha and none in Aizawl, Kolasib and Lawngtlai) were graded as Very Good in their overall capability in ICT after they attended training. 40% (40% in Aizawl and Saiha, 50% in Champhai and Lunglei and 30% in Kolasib and Lawngtlai districts) were graded as Good and 43% (60% in both Aizawl and Lawngtlai, 50%, 40%, 30% and 20% respectively in Kolasib, Lunglei, Champhai and Saiha districts) as Fair. At the same time 12% (30%, 20% and 10% respectively in Saiha, Kolasib and Lawngtlai districts) were graded as not having any capability even after they attended training.

The overall ICT capability of the Non-teaching Staff after they attended training as per the information received from the Headmasters was Very Good with only 7% (20% each in Champhai and Lunglei district and Nil in the rest of the districts). 55% of the Non-teaching Staff were Good (70% in Lawngtlai, 60% each in Aizawl, Champhai and Kolasib, and 40% each in Lunglei and Saiha districts) in their ICT capabilities after they attended training. Fair was the grade given to 30% (50% in Saiha, 40% in Aizawl, 30% in Lunglei and 20% each in Champhai, Kolasib and Lawngtlai districts) and 8% of this group (20% in Kolasib district, 10% each in Lawngtlai, Lunglei and Saiha districts and 0% in Aizawl and Champhai districts) had no ICT capability even after they attended training.

Among the Administrative Staff, 8% (10% each in Kolasib, Lawngtlai and Saiha, 20% in Lunglei and none in Aizawl districts) became Very Good in their overall ICT capabilities after they attended training. The Headmasters graded 49% as having acquired Good capability from their training (70% in Champhai, 50% in Aizawl and Saiha and 40% each in Kolasib, Lawngtlai and Lunglei districts). 33% (50% in Aizawl, 40% in both Lawngtlai and Saiha districts 30% in Kolasib

**Table - 4.3**  
**Grading by Headmasters/Principals of Overall ICT Capability of**  
**their Staff after Training**

<b>Type of Staff</b>	<b>District</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>No Capability</b>
Teaching Staff	Aizawl			40%	60%	-
	Champhai	-	10%	50%	30%	10%
	Kolasib	-	-	30%	50%	20%
	Lawngtlai	-	-	30%	60%	10%
	Lunglei	-	10%	50%	40%	-
	Saiha	-	10%	40%	20%	30%
	<b>Total</b>			<b>5%</b>	<b>40%</b>	<b>43%</b>
Non-teaching Staff	Aizawl	-	-	60%	40%	-
	Champhai	-	20%	60%	20%	-
	Kolasib	-	-	60%	20%	20%
	Lawngtlai	-	-	70%	20%	10%
	Lunglei	-	20%	40%	30%	10%
	Saiha	-		40%	50%	10%
	<b>Total</b>			<b>7%</b>	<b>55%</b>	<b>30%</b>
Administrative Staff	Aizawl	-	-	50%	50%	-
	Champhai	-	-	70%	20%	10%
	Kolasib	-	10%	40%	30%	20%
	Lawngtlai	-	10%	40%	40%	10%
	Lunglei	-	20%	40%	20%	20%
	Saiha	-	10%	50%	40%	-
	<b>Total</b>			<b>8%</b>	<b>49%</b>	<b>33%</b>

and 20% in Champhai and Lunglei districts) of this group were graded Fair in their ICT capabilities while 10% (20% in Kolasib and Lunglei, 10% in Champhai and Lawngtlai districts and none in the rest) were graded as having No capability after attending training.

#### **4.4 Perception of Headmasters Relating to Impact of ICT Programme on Teachers**

The perception of Headmasters on the impact of ICT programme on teachers was collected and analyzed. The findings related to these perceptions have been given in the Table-4.4.

##### **a) Increased enthusiasm and confidence:**

Analysis of data vide Table-4.4 shows that 32% of headmaster of sample schools feel that introduction ICT has increased the enthusiasm and confidence level of teachers, however, 23% of them do not think so. On the other hand a considerable percentage (45%) of these headmasters, while answering to this question, said they do not know the impact of ICT on enthusiasm and confidence of teachers.

##### **b) Increased efficiency/collaboration/planning:**

Analyses of data vide Table-4.4 shows that 23% of headmaster of sample schools feel that introduction of ICT has increased the efficiency/collaboration/planning level of teachers, however, 25% of them do not think so. On the other hand a considerable percentage (52%) of these headmasters, while answering to this question, said they do not know the impact of ICT on efficiency/collaboration/planning level of teachers.

##### **c) Increased skills/self-development drive:**

Analysis of data vide Table-4.4 shows that 25% of headmaster of sample schools feel that introduction ICT has increased the skills/self-development drive among teachers, however, 10% of them do not think so. On the other 65% of these headmasters, while answering to this question, said they do not know the impact of ICT on skills/self-development drive of teachers.

##### **d) Increased use of ICT to plan enhance learning process in classrooms**

Analysis of data vide Table-4.4 shows that 28% of headmaster of sample schools feel that introduction computers has increased the use of ICT by teachers to plan enhance their teaching-learning process in classrooms, however, 17% of them do not think so. On the other hand 55% of these

headmasters, while answering to this question, said they do not know the impact of ICT on increased use of ICT by teachers to plan enhance their teaching-learning process in classrooms.

**e) Increased use of ICT for assessment**

A perusal of vide Table-4.4 shows that 30% of headmaster of sample schools felt that introduction ICT has increased the use of ICT for assessment by teachers; however, 20% of them did not think so. On the other hand a considerable percentage (50%) of these headmasters, while answering to this question, said they did not know the impact of ICT on the increased use of ICT for assessment.

**f) Increased home use of ICT**

Analyses of data vide Table-4.4 shows that 27% of headmaster of sample schools feel that introduction of ICT has increased the home use of ICT by teachers, however, 20% of them did not think so. On the other hand a considerable percentage (53%) of these headmasters, while answering to this question, said they did not know the impact of ICT on the increased use of ICT by teachers at home.

**g) Increased use of ICT on mobile devices**

Analysis of vide Table-4.4 shows that 20% of headmaster of sample schools felt that introduction ICT had increased the use of ICT on mobile devices. However, 7% of them did not think so. On the other hand a considerable percentage (**73%**) of these headmasters, while answering to this question, said they did not know the impact of ICT the use of ICT on mobile devices.

**h) Increased leadership in ICT related discussion/forum**

Analysis of data vide Table-4.4 shows that 5% of headmaster of sample schools felt that introduction ICT had increased leadership in ICT related discussion/forum, however, 10% of them did not think so. On the other hand



**Table 4.4**  
**Perceptions of Headmasters on Impact of ICT Program on Teachers**  
**(N=10 Headmasters from Each District)**

Sl. No.	Impact Attribute	District	Impact on Teachers		
			Yes	No	Don't know
1	Increased enthusiasm and confidence	Aizawl	6(60%)	-	4(40%)
		Champhai	2(20%)	2(20%)	6(60%)
		Kolasib	4(40%)	-	6(60%)
		Lawngtlai	2(20%)	3(30%)	5(50%)
		Lunglei	3(30%)	7(70%)	
		Saiha	2(20%)	2(20%)	6(60%)
		<b>Total</b>	<b>19(32%)</b>	<b>14(23%)</b>	<b>27(45%)</b>
2	Increased efficiency/collaboration/ planning	Aizawl	1(10%)	3(30%)	6(60%)
		Champhai	2(20%)	-	8(80%)
		Kolasib	4(40%)	-	6(60%)
		Lawngtlai	2(20%)	3(30%)	5(50%)
		Lunglei	3(30%)	7(70%)	
		Saiha	2(20%)	2(20%)	6(60%)
		<b>Total</b>	<b>14(23%)</b>	<b>15(25%)</b>	<b>31(52%)</b>
3	Increased skills/self-development drive	Aizawl	4(40%)	3(30%)	3(30%)
		Champhai	3(30%)	-	7(70%)
		Kolasib	4(40%)	-	6(60%)
		Lawngtlai	2(20%)	3(30%)	5(50%)

		Lunglei	-	-	10(100%)
		Saiha	2(20%)	-	8(80%)
		<b>Total</b>	<b>15(25%)</b>	<b>6(10%)</b>	<b>39(65%)</b>
4	Increased use of ICT to plan enhance learning process in classrooms	Aizawl	4(40%)	2(20%)	4(40%)
		Champhai	4(40%)	1(10%)	5(50%)
		Kolasib	2(20%)	-	8(80%)
		Lawngtlai	1(10%)	3(30%)	6(60%)
		Lunglei	4(40%)	2(20%)	4(40%)
		Saiha	2(20%)	2(20%)	6(60%)
		<b>Total</b>	<b>17(28%)</b>	<b>10(17%)</b>	<b>33(55%)</b>
5	Increased use of ICT for assessment	Aizawl	3(30%)	4(40%)	3(30%)
		Champhai	4(40%)	1(10%)	5(50%)
		Kolasib	3(30%)	1(10%)	6(60%)
		Lawngtlai	2(20%)	3(30%)	5(50%)
		Lunglei	4(40%)	2(20%)	4(40%)
		Saiha	2(20%)	1(10%)	7(70%)
		<b>Total</b>	<b>18(30%)</b>	<b>12(20%)</b>	<b>30(50%)</b>
6	Increased home use of ICT	Aizawl	2(20%)	3(30%)	5(50%)
		Champhai	1(10%)	4(40%)	5(50%)
		Kolasib	6(60%)	-	4(40%)
		Lawngtlai	1(10%)	3(30%)	6(60%)
		Lunglei	4(40%)	2(20%)	4(40%)
		Saiha	2(20%)	-	8(80%)
		<b>Total</b>	<b>16(27%)</b>	<b>12(20%)</b>	<b>32(53%)</b>

7	Increased use of ICT on mobile devices	Aizawl	2(20%)	1(10%)	7(70%)
		Champhai	1(10%)	-	9(90%)
		Kolasib	6(60%)	-	4(40%)
		Lawngtlai	1(10%)	3(30%)	6(60%)
		Lunglei	-	-	10(100%)
		Saiha	2(20%)	-	8(80%)
		<b>Total</b>	<b>12(20%)</b>	<b>4(7%)</b>	<b>44(73%)</b>
8	Increased leadership in ICT related discussion/forum	Aizawl	2(20%)	-	8(80%)
		Champhai	1(10%)	-	9(90%)
		Kolasib	-	3(30%)	7(70%)
		Lawngtlai	-	3(30%)	7(70%)
		Lunglei	-	-	10(100%)
		Saiha	-	-	10(100%)
		<b>Total</b>	<b>3(5%)</b>	<b>6(10%)</b>	<b>51(85%)</b>
9	Increased initiative to collaborate between schools	Aizawl	2(20%)	2(20%)	6(60%)
		Champhai	1(10%)	-	9(90%)
		Kolasib	1(10%)	2(20%)	7(70%)
		Lawngtlai	-	2(20%)	8(80%)
		Lunglei	-	-	10(100%)
		Saiha	-	-	10(100%)
		<b>Total</b>	<b>4(7%)</b>	<b>6(10%)</b>	<b>50(83%)</b>

85% of these headmasters, while answering to this question, said they did not know the impact of ICT on enthusiasm and confidence.

**i) Increased initiative to collaborate between schools**

Analysis of data vide Table-4.4 that 7% of headmaster of sample schools felt that introduction ICT has increased initiative to collaborate between schools, however, 10% of them did not think so. On the other hand 83% of these headmasters, while answering to this question, said they did not know the impact of ICT on enthusiasm and confidence.

**4.5 Perception of Headmasters Relating Impact of ICT Programme on Students:**

**a) Overall Improvement in students' subject related performance**

Analysis of data vide Table-4.5 reveals that 25% of headmaster of sample schools feel that introduction of ICT has positively affected the overall subject related performance of students; however, 8% of them did not think so. On the other hand a considerable percentage (67%) of these headmasters, while answering to this question, said they did not know whether ICT has any positive or negative impact on the overall performance of students in school subjects.

**b) Perceived improvement on learning outcomes**

Perusals of data vide Table-4.5 reveals that 23% of headmaster of sample schools feel that introduction of ICT has positively affected the learning outcomes of students, however, 7% of them did not think so. On the other hand a considerable percentage (70%) of these headmasters, while answering to this question, said they did not know whether ICT has any positive or negative impact on the learning outcomes of students.

**c) Improved problem solving skills**

A quick glance at data vide Table-4.5 reveals that 23% of headmaster of sample schools feel that introduction of ICT has improved problem solving skills of students, however, 7% of them did not think so. On the other hand a

considerable percentage (70%) of these headmasters, while answering to this question, said they did not know whether ICT has any positive or negative impact on the problem solving skills of students.

**d) Improved students' attention/behavior/attendance**

Analyses of data vide Table 4.5 reveals that 33% of headmaster of sample schools feel that introduction of ICT has positive impact on students' attention/behavior/attendance, however, 5% of them did not think so. On the other hand a considerable percentage (62%) of these headmasters, while answering to this question, said they did not know whether ICT has any positive or negative impact on students' attention/behavior/attendance.

**e) Improved motivation and engagement with studies**

Perusal of data vide Table-4.5 reveals that 23% of headmaster of sample schools feel that introduction of ICT has improved motivation and engagement of students with their studies, however, 7% of them did not think so. On the other hand a considerable percentage (70%) of these headmasters, while answering to this question, said they did not know whether ICT has any positive or negative impact on the motivation and engagement of students with their studies.

**f) Increase in working collaboratively with peers**

Perusal of data vide Table-4.5 reveals that 17% of headmaster of sample schools feel that introduction of ICT has positively affected the students' ability to work collaboratively with peers, however, 3% of them did not think so. On the other hand a considerable percentage (80%) of these headmasters, while answering to this question, said they did not know whether ICT has any positive or negative impact on the students' ability to work collaboratively with peers.

**g) Decreased rate of dropouts**

Perusal of data vides Table- 4.5 reveals that 7% of headmaster of sample schools feel that introduction of ICT has decreased the dropout rate of

**Table4.5**  
**Impact of ICT Programme on Students (In Percentages)**

Sl. No.	Impact Attribute	District	On Students		
			Yes	No	Don't know
1	Overall Improvement in students' subject related performance	Aizawl	4(40%)	1(10%)	5(50%)
		Champhai	2(20%)	-	8(80%)
		Kolasib	3(30%)	-	7(70%)
		Lawngtlai	1(10%)	2(20%)	7(70%)
		Lunglei	3(30%)	2(20%)	5(50%)
		Saiha	2(20%)	-	8(80%)
		<b>Total</b>	<b>15(25%)</b>	<b>5(8%)</b>	<b>40(67%)</b>
2	Perceived improvement on learning outcomes	Aizawl	2(20%)	-	8(80%)
		Champhai	1(10%)	1(10%)	8(80%)
		Kolasib	4(40%)	-	6(60%)
		Lawngtlai	2(20%)	1(10%)	7(70%)
		Lunglei	3(30%)	2(20%)	5(50%)
		Saiha	2(20%)		8(80%)
		<b>Total</b>	<b>14(23%)</b>	<b>4(7%)</b>	<b>42(70%)</b>
3	Improved problem solving skills	Aizawl	2(20%)	-	8(80%)
		Champhai	2(20%)	1(10%)	7(70%)
		Kolasib	4(40%)	-	6(60%)

		Lawngtlai	2(20%)	1(10%)	7(70%)
		Lunglei	3(30%)	2(20%)	5(50%)
		Saiha	1(10%)	-	9(90%)
		<b>Total</b>	<b>14(23%)</b>	<b>4(7%)</b>	<b>42(70%)</b>
4	Improved students' attention/behavior/attendance	Aizawl	6(60%)	-	4(40%)
		Champhai	2(20%)	-	8(80%)
		Kolasib	4(40%)	-	6(60%)
		Lawngtlai	3(30%)	1(10%)	6(60%)
		Lunglei	3(30%)	2(20%)	5(50%)
		Saiha	2(20%)		8(80%)
		<b>Total</b>	<b>20(33%)</b>	<b>3(5%)</b>	<b>37(62%)</b>
5	Improved motivation and engagement with studies	Aizawl	4(40%)	2(20%)	4(40%)
		Champhai	2(20%)	-	8(80%)
		Kolasib	4(40%)	-	6(60%)
		Lawngtlai	-	1(10%)	9(90%)
		Lunglei	2(20%)	-	8(80%)
		Saiha	2(20%)	1(10%)	7(70%)
		<b>Total</b>	<b>14(23%)</b>	<b>4(7%)</b>	<b>42(70%)</b>
6	Increase in working collaboratively with peers	Aizawl	2(20%)	2(20%)	6(60%)
		Champhai	1(10%)	-	9(90%)
		Kolasib	4(40%)	-	6(60%)
		Lawngtlai		-	10(100%)

		Lunglei	2(20%)	-	8(80%)
		Saiha	1(10%)	-	9(90%)
		<b>Total</b>	<b>10(17%)</b>	<b>2(3%)</b>	<b>48(80%)</b>
7	Decreased rate of dropouts	Aizawl	3(30%)	2(20%)	5(50%)
		Champhai	-	6(60%)	4(40%)
		Kolasib	-	10(100%)	
		Lawngtlai	-	-	10(100%)
		Lunglei	1(10%)	-	9(90%)
		Saiha		-	10(100%)
		<b>Total</b>	<b>4(7%)</b>	<b>18(30%)</b>	<b>38(63%)</b>



students, however, 30% of them did not think so. On the other hand a considerable percentage (**63%**) of these headmasters, while answering to this question, said they did not know whether ICT has any impact on decrease of dropout rate of students.

#### **4.6 Perception of Headmasters Relating Impact of ICT Programme on School Environment:**

The impact of ICT program on various issues related to school environment was studied and analyzed which is presented in Table-4.6.

##### **a) Increased use of ICT to generate MIS**

A quick glance at data vide Table-4.6 shows that 20% of headmasters of sample schools feel that availability of computers in school has increased the use of ICT to generate MIS; however, 13% of them did not think so. On the other hand a considerable percentage (67%) of these headmasters, while answering to this question, said they did not know whether availability of computers has increased the use of ICT in generating MIS.

##### **b) Increased presence among peer schools-SMART school**

Perusal of data vide Table-4.6 reveals that 8% of headmaster of sample schools feel that introduction of ICT has increased the presence of SMART school among peer schools, however, 10% of them did not think so. On the other hand a considerable percentage (82%) of these headmasters, while answering to this question, said they do not know, about the increased presence of SMART school among peer schools.

##### **c) Increased collaboration with other schools**

Perusal of data vide Table-4.6 reveals that 3% of headmaster of sample schools feel that introduction of ICT has increased collaboration with other schools, however, 5% of them did not think so. On the other hand a considerable percentage (92%) of these headmasters, while answering to this question, said they did not know whether ICT has increased collaboration with other schools.

**Table 4.6**  
**Impact of ICT Programme on School Environment**

Sl.No	Impact Attribute	District	On overall school Environment		
			Yes	No	Don't know
1	Increased use of ICT to generate MIS	Aizawl	3(30%)	4(40%)	3(30%)
		Champhai	1(10%)	1(10%)	8(80%)
		Kolasib	3(30%)	-	7(70%)
		Lawngtlai	2(20%)	1(10%)	7(70%)
		Lunglei	2(20%)	2(20%)	6(60%)
		Saiha	1(10%)	-	9(90%)
		<b>Total</b>	<b>12(20%)</b>	<b>8(13%)</b>	<b>40(67%)</b>
2	Increased presence among pee schools- SMART school	Aizawl		3(30%)	7(70%)
		Champhai	1(10%)	1(10%)	8(80%)
		Kolasib	-	-	10(100%)
		Lawngtlai	-	-	9(90%)
		Lunglei	2(20%)	2(20%)	6(60%)
		Saiha	1(10%)		9(90%)
		<b>Total</b>	<b>5(8%)</b>	<b>6(10%)</b>	<b>49(82%)</b>
3	Increased collaboration with other schools	Aizawl	1(10%)	-	9(90%)
		Champhai	-	-	10(100%)
		Kolasib	-	-	10(100%)
		Lawngtlai	1(10%)	3(30%)	6(60%)

		Lunglei	-	-	10(100%)
		Saiha	-	-	10(100%)
		<b>Total</b>	<b>2(3%)</b>	<b>3(5%)</b>	<b>55(92%)</b>
4	Increased contacts with education office	Aizawl	3(30%)	1(10%)	6(60%)
		Champhai	2(20%)	-	8(80%)
		Kolasib	2(20%)	-	8(80%)
		Lawngtlai	1(10%)	3(30%)	6(60%)
		Lunglei	3(30%)	1(10%)	6(60%)
		Saiha	1(10%)	-	9(90%)
		<b>Total</b>	<b>12(20%)</b>	<b>5(8%)</b>	<b>43(72%)</b>
5	Any online sharing and collaboration through academic portals	Aizawl	3(30%)	1(10%)	6(60%)
		Champhai	2(20%)	1(10%)	7(70%)
		Kolasib	-	-	10(100%)
		Lawngtlai	-	3(30%)	7(70%)
		Lunglei	-	-	10(100%)
		Saiha	-	-	10(100%)
		<b>Total</b>	<b>5(8%)</b>	<b>5(8%)</b>	<b>50(84%)</b>

**d) Increased contacts with education office**

Perusal of data vide Table-4.6 reveals that 20% of headmaster of sample schools feel that introduction of ICT has increased contacts with education office, however, 8% of them did not think so. On the other hand a considerable percentage (72%) of these headmasters, while answering to this question, said they did not know whether ICT has increased contacts with education office.

**e) Any online sharing and collaboration through academic portals**

An examination of data vide Table-4.6 reveals that 8% of headmaster of sample schools feel that introduction of ICT has positively affected online sharing and collaboration through academic portals, however, 8% of them did not think so. On the other hand a considerable percentage (80%) of these headmasters, while answering to this question, said they did not know whether ICT has any positive impact on online sharing and collaboration through academic portals.

**4.7 Awareness Level of Headmasters/Principals and Subject Teachers about the Scope and Purpose of ICT Implementation**

On the issue of the awareness level of Headmasters/Principals and Subject Teachers about the scope and purpose of ICT implementation, 20% of the schools in Aizawl district reported that awareness sessions were held during staff meetings. Champhai district had 60%, Kolasib and Saiha had 30%, Lawngtlai had 40% and Lunglei had 70% of the schools having awareness sessions during staff meetings. Special workshop was reported to have been conducted by 20% of the schools in Kolasib district while none of the schools in the other five (5) districts reported the conduct of such workshop. Similarly, except for Kolasib district where 20% of the schools reported the documentation of these sessions where feedback was also taken from the staff, all the schools in the remaining districts reported negatively. Helpdesk /team for follow up was created in 20% of the schools in Kolasib district while it was Nil (0%) in all the schools in the other districts viz. Aizawl, Champhai, Lawngtlai, Lunglei and Saiha.

**Table 4.7**  
**Awareness Level of Headmasters/Principals and Subject Teachers about the Scope and Purpose of ICT Implementation**

S/N	Aware-ness	Aizawl		Champhai		Kolasib		Lawngtlai		Lunglei		Saiha	
		Hd/Pri	Subj. Teacher	Hd/Prin	Subj. Teacher	Hd/Prin	Subj. Teacher	Hd/Prin	Subj. Teacher	Hd/Prin	Subj. Teacher	Hd/Prin	Subj. Teacher
1	Awareness session during staff meetings	20%	20%	60%	60%	30%	30%	40%	40%	70%	70%	30%	30%
2	Special workshop conducted	Nil	Nil	Nil	Nil	20%	20%	Nil	Nil	Nil	Nil	Nil	Nil
3	Are sessions documented	Nil	Nil	Nil	Nil	20%	20%	Nil	Nil	Nil	Nil	Nil	Nil
4	Was any feedback taken from staff	Nil	Nil	Nil	Nil	20%	20%	Nil	Nil	Nil	Nil	Nil	Nil
5	Was there any helpdesk/team created for follow up?	Nil	Nil	Nil	Nil	20%	20%	Nil	Nil	Nil	Nil	Nil	Nil

**SECTION-II****ANALYSES OF DATA RELATING RESPONSES OF SUBJECT TEACHERS****4.8. Gender and Age Profile of Sample Teachers Teaching Different Subjects**

Analyses of data vide Table-4.8 shows that 68% of sample teachers teaching science, math, English and social studies were males and only 32% were females. A district wise comparison of sample teachers reveals that Kolasib and Saiha districts have considerably more male teachers than other districts. In terms of age, 21% of sample teachers were over 45 years of age, 54% of teachers were in the age group 35-45 years, 23% in age group 25-35years, and only 2% were in the age group below 25 years.

**Table 4.8**  
**Gender and Age group of Sample Teacher Teaching Language, Science, Math and Social Studies in Sample Schools**  
**(N=40 Teachers from each district)**

District	Gender		Age group			
	Male	Female	Under 25 yrs.	25-35yrs	35-45yrs	Over 45yrs
Aizawl	26(65%)	14(35%)	-	12(30%)	24(60%)	4(10%)
Champhai	25(63%)	15(37%)	2(5%)	8(20%)	21(53%)	9(22%)
Kolasib	29(73%)	11(27%)	1(2%)	8(20%)	21(53%)	10(25%)
Lawngtlai	27(68%)	13(32%)	1(2%)	6(8%)	22(55%)	11(27%)
Lunglei	25(63%)	15(37%)	1(2%)	10(25%)	21(53%)	8(20%)
Saiha	31(78%)	9(22%)	-	11(27%)	20(50%)	9(22%)
<b>Total</b>	<b>163(68%)</b>	<b>77(32%)</b>	<b>5(2%)</b>	<b>55(23%)</b>	<b>129(54%)</b>	<b>51(21%)</b>

**4.9 Educational and Professional Qualifications of Sample Teachers:**

The Table-4.9 gives an analysis of the educational and professional qualifications of the sample teachers teaching Language, Mathematics, Science and Social Studies.

In terms of educational qualification 88% of teachers teaching language, science, math and social studies in sample schools were possessing graduation

(B.A./B.Sc./B.Com.) degree, whereas, only 12% of these teachers were having post graduate degrees M.A/M.Sc./M.Com. A district wise comparison shows that the percentage of post graduate teachers were the highest(22%) in Aizawl district, seconded by Saiha district(20%). However, the percentage of post graduate teachers was very low (i.e. 2% to 7%) in Kolasib, Lawngtlai and Lunglei districts.

Further, the data vide same table shows that 80% of these teachers were trained and the remaining 20% were untrained. A district wise analysis shows that the percentage of trained teachers was the highest (90%) in Aizawl district,

**Table 4.9**  
**Educational and Professional Qualifications of Sample Teacher Teaching Language, Science, Math and Social Studies in Mizoram (N=40Teachers from each District)**

District	Educational Qualifications		Professional Qualification	
	B.A./B.Sc./B.Com.	M.A/M.Sc./M.Com.	Trained	Untrained
Aizawl	31(78%)	9(22%)	36(90%)	4(10%)
Champhai	34(85%)	6(15%)	29(73%)	11(27%)
Kolasib	37(93%)	3(7%)	28(70%)	12(30%)
Lawngtlai	39(98%)	1(2%)	30(75%)	10(25%)
Lunglei	38(95%)	2(5%)	35(88%)	5(12%)
Saiha	32(80%)	8(20%)	35(88%)	5(12%)
Total	<b>211(88%)</b>	<b>29(12%)</b>	<b>193(80%)</b>	<b>47(20%)</b>

seconded by Lunglei and Saiha districts (88%). However, the Champhai and Kolasib districts have relatively less percentage of untrained teachers, viz. 73% and 70%, respectively.

#### **4.10 Status ICT Training Received by Sample Teachers:**

The use of ICT in teaching learning processes by teachers largely depends on two factors viz. their own training as well as the availability of ICT tools in schools. Sample teachers were asked about the training they received,

duration of the training as well as the organizer. Their responses have been analyzed in Table.10.

A perusal of data vide Table- 4.10 shows that only 20% of sample teachers have received induction training of 5 to 10 days, and the remaining 80% have not yet received any training in use of ICT in curriculum transaction in classroom. The percentage of these ICT trained teachers was highest (30%) in Lunglei district seconded by Champhai district (27%). The Kolasib and Lawngtlai districts were in 4<sup>th</sup> and 5<sup>th</sup> position having 22% and 17% ICT trained teachers. It is discouraging to report that Saiha district has only 5% ICT trained teachers. Further, while responding to supplementary questions, on the nature of training and agency that conducted such training, 94% of teachers who claimed to have received the said ICT training reported that they attended an induction training of 5 -10 days duration under SCERT, Mizoram during different years.

**Table 4.10**  
**Status ICT Training Received by Sample Teachers Teaching Language, Science, Math and Social Studies in Mizoram**  
**(N=40 Teachers from Each District)**

District	ICT Training Received		Nature and Duration of Training		
	Yes	No	Name of Training	Agency under which Training Received	
				SCERT (One/Two Week)	NEC (3 Month)
Aizawl	7(17%)	33(83%)	Induction Training	7(100%)	–
Champhai	11(27%)	29(73%)	Induction Training	11(100%)	–
Kolasib	9(22%)	31(78%)	Induction Training	8(89%)	1(11%)
Lawngtlai	7(17%)	33(83%)	Induction Training	6(86%)	1(14%)
Lunglei	12(30%)	28(70%)	Induction Training	11(92%)	1(8%)
Saiha	2(5%)	38(95%)	Induction Training	2(100%)	–
<b>Total</b>	<b>48(20%)</b>	<b>192(80%)</b>		<b>45(94%)</b>	<b>3(6%)</b>



#### 4.11 Self-Rating by Sample Teachers of Their Expertise in the Use of ICT Tools:

Teachers' own expertise in the use of ICT tools is an important precondition for the use of these tools in their teaching learning processes. In the absence of this expertise one cannot expect them to use these tools. The sample teachers of the present study were asked to rate themselves on their expertise in the use of ICT tools. The self ratings by subject teachers have been given in Table-4.11.

A perusal of data vide Table- 411 shows that only 6% of sample teachers have rated their own expertise, in the use of ICT tools, as excellent, and 31% as good. Of the remaining 63% teachers, 37% have rated their expertise as average and 26% as poor. These teachers with average and poor expertise in the use of ICT tools may not have confidence in the use of these tools in preparation and delivery of their lectures in classroom.

Further, a district wise comparison of statistical findings vide the same table shows that 40% to 45% of teachers in Aizawl , Champhai and Kolasib and Lunglei districts rated their own expertise as excellent or good, however these figures in Lawngtlai and Saiha districts were 22% and 27, respectively.

**Table 4.11**  
**Self-Rating of their Expertise in the Use of ICT Tools by Sample Teachers Teaching Language, Science, Math and Social Studies in Mizoram (N=40 Teachers from Each District)**

District	Ratings by Teacher of Their Own Expertise in the Use of ICT Tools			
	Poor	Average	Good	Excellent
Aizawl	9(22%)	15(38%)	10(25%)	6(15%)
Champhai	10(25%)	12(30%)	16(40%)	2(5%)
Kolasib	6(15%)	16(40%)	18(45%)	-
Lawngtlai	11(28%)	20(50%)	7(17%)	2(5%)
Lunglei	9(22%)	13(33%)	15(38%)	3(7%)
Saiha	17(43%)	12(30%)	8(20%)	3(7%)
<b>Total</b>	<b>62(26%)</b>	<b>88(37%)</b>	<b>74(31%)</b>	<b>16(6%)</b>

#### 4.12. Teachers Perception of Students Reactions/Attitude towards Technology:

No one else, other than teachers, knows students' reactions and attitude towards the use of ICT in education. The Table-4.12 presents the teachers perception of students' attitude towards technology.

While answering the question on students' reactions and attitude towards technology 12% of teachers reported that students are very enthusiastic, 45% said they are enthusiastic and 33% are just average in their reactions and attitudes towards ICT in education. It was pleasing to know that only 8% and 2% of teachers reported about their lukewarm and passive attitude towards technology. Analysis of data relating to teachers' perception of students' reactions and attitude towards computers and related technology, vide Table-4.12 shows that 10% to 20% of sample teachers teaching different subjects, feel that their students are very enthusiastic, and 25% to 50% perceived them as enthusiastic about the use of these technologies in teaching and learning. These perceptions of teachers on students' enthusiasm give us hope that students will definitely use these technologies in their learning if such technologies are made more accessible to them.

**Table 4.12**  
**Teachers Perception of Students Reactions/Attitude towards Technology**  
**(N=40 Teachers from Each District)**

District	Students' Reactions to Technology				
	Very Enthusiastic	Enthusiastic	Average	Lukewarm	Passive
Aizawl	-	20(50%)	12(30%)	4(10%)	4(10%)
Champhai	8(20%)	16(40%)	12(30%)	4(10%)	-
Kolasib	6(15%)	24(60%)	10(20%)	-	-
Lawngtlai	6(15%)	10(25%)	20(50%)	4(10%)	-
Lunglei	4(10%)	18(45%)	14(35%)	4(10%)	-
Saiha	6(15%)	20(50%)	10(25%)	4(10%)	-
<b>Total</b>	<b>30(12%)</b>	<b>108(45%)</b>	<b>78(33%)</b>	<b>20(8%)</b>	<b>4(2%)</b>

#### **4.13 Teachers Rating of Students' Skills, Competency, Preparedness and Comfort in Use of Technology:**

Analysis of data on relating to rating of students' skills, competency, preparedness and comfort in use of technology has been given in Table-4-13

##### **a) Rating of Students' ICT Skills:**

An examination of data vide Table-4.13 shows that none of the sample teachers from all six districts rated students' skills in use of technology as highly satisfactory. However, 22% of teachers rated students' skills in use of technology as satisfactory, 46% reported it as average, 17% as fast grasping, 12% as below average, and only 3% as not satisfactory.

##### **b) Rating of Students' Competency in Use of ICT:**

A Perusal of data vide Table- 4.13 shows that out of 240 teachers, included in the sample from all 6 districts, only 16% of teachers rated students' competency in use of technology as satisfactory, 37% as average, 27% as fast grasping, 11% as below average and only 11% as not satisfactory. However, none of the sample teachers from all six districts rated students' competency in use of technology as highly satisfactory.

##### **c) Rating of Students' Preparedness for Use of ICT:**

A quick glance at data vide Table- 4.13 shows that out of 240 teachers, included in the sample from all 6 districts, none of the sample teachers from all six districts rated students' preparedness in use of technology as highly satisfactory. However, 22% of teachers rated students' preparedness in use of technology as satisfactory, 46% as average, 17% as fast grasping, 12% as below average and only 3% as not satisfactory.

##### **d) Rating of Students' Comfort in use of ICT:**

An examination of data vide Table- 4.13 shows that out of 240 teachers, included in the sample from all 6 districts, only 32% rated students' comfort in use of technology as satisfactory, 40% as reported it as average, 19% as fast grasping, 9% as below average, and none as not satisfactory. However, none of

**Table 4.13**  
**Rating of Students' Skills, Competency, Preparedness and Comfort in Use of Technology by Teachers**  
**(N=40 Teachers from Each District)**

Criteria of Rating	District	Rating By Teachers					
		Highly satisfactory	Satisfactory	Average	Fast Grasping	Below Average	Not satisfactory
Skills	Aizawl	Nil	12(30%)	20(50% )	4(10%)	4(10%)	Nil
	Champhai	Nil	8(20%)	16(40%)	6(15%)	6(15%)	4(10%)
	Kolasib	Nil	8(20%)	22(55%)	6(15%)	4(10%)	Nil
	Lawngtlai	Nil	6(15%)	18(45% )	8(20%)	6(15%)	2(5%)
	Lunglei	Nil	10(25%)	18(45% )	8(20%)	4(10%)	Nil
	Saiha	Nil	8(20%)	16(40% )	10(25% )	6(15%)	Nil
	<b>Total</b>	<b>Nil</b>	<b>52(22%)</b>	<b>110(46%)</b>	<b>42(17%)</b>	<b>30(12)%</b>	<b>6(3%)</b>
Competency	Aizawl	Nil	10(25% )	14(35% )	12(30%)	4(10%)	Nil
	Champhai	Nil	8(20%)	10(25% )	14(35% )	4(10%)	4(10%)
	Kolasib	Nil	6(15%)	16(40%)	12(30%)	3(8%)	3(7%)
	Lawngtlai	Nil	3(8%)	17(42% )	6(15%)	6(15%)	8(20%)
	Lunglei	Nil	8(20%)	16(40%)	8(20%)	4(10%)	4(10%)
	Saiha	Nil	4(10%)	10 (25%)	12(30% )	6(15%)	8(20%)
	<b>Total</b>	<b>Nil</b>	<b>39(16%)</b>	<b>83(35%)</b>	<b>64(27%)</b>	<b>27(11%)</b>	<b>27(11%)</b>
Preparedness	Aizawl	Nil	10 (25%)	14(35% )	8(20%)	4(10%)	4(10%)
	Champhai	Nil	12(30% )	12(30%)	10 (25%)	6(15%)	Nil
	Kolasib	Nil	14(35% )	18(45% )	4(10%)	4(10%)	Nil

	Lawngtlai	Nil	10 (25%)	14(35% )	10 (25%)	4(10%)	2(5%)
	Lunglei	Nil	12(30%)	16(40%)	8(20%)	2(5%)	2(5%)
	Saiha	Nil	8(20%)	18(45% )	10 (25%)	4(10%)	Nil
	<b>Total</b>	<b>Nil</b>	<b>66(28%)</b>	<b>92(38%)</b>	<b>50(21%)</b>	<b>24(10%)</b>	<b>8(3%)</b>
Comfort	Aizawl	Nil	16(40%)	12(30% )	8(20%)	4(10%)	Nil
	Champhai	Nil	14(35% )	16(40%)	6(15%)	4(10%)	Nil
	Kolasib	Nil	16(40%)	12(30%)	6(15%)	6(15%)	Nil
	Lawngtlai	Nil	8(20%)	20(50% )	8(20%)	4(10%)	Nil
	Lunglei	Nil	14(35% )	16(40%)	10 (25%)		Nil
	Saiha	Nil	8(20%)	20(50% )	8(20%)	4(10%)	Nil
	<b>Total</b>	<b>Nil</b>	<b>76(32%)</b>	<b>96(40%)</b>	<b>46(19%)</b>	<b>22(9%)</b>	<b>Nil</b>

the sample teachers from all six districts rated students' comfort of in use of technology as highly satisfactory.

#### **4.14 Areas in which Teachers Apply or Planning to Apply Technology in School**

Analysis of data relating to the areas in which teachers apply or planning to apply technology has been given in Table 4.14.

##### **a) Status of Use of Technology by Teachers in Teaching:**

A Perusal of data vide Table- 4.14 shows that out of 240 teachers, included in the sample from all 6 districts, only 9% of teachers are currently using technology in their teaching in schools, 22% think it has potential but not using, 27% as fast grasping, 30% said they are planning to use in near future and 39% said they need training for the use of technology in their teaching in schools.

##### **b) Status of Use of Technology by Teachers in Preparing Lesson Plans:**

A quick glance at data vide Table- 4.14, shows that out of 240 teachers, included in the sample from all 6 districts, only 12% of teachers are currently using technology in preparing lesson plans, 25% think it has potential but not using, 37% as fast grasping, 30% said they are planning to use in near future and 26% said they need training for the use of technology in preparing lesson plans.

##### **c) Status of Use of Technology by Teachers in Research:**

A perusal of data vide Table- 4.14 shows that out of 240 teachers, included in the sample from all 6 districts, none of the teachers is currently using or has a plan to use it in near future in research, as all of them reported that they need training in the use of the technology in research.

##### **d) Status of Use of Technology by Teachers in Clarification on Topics:**

Analysis of data vide Table- 4.14 shows that out of 240 teachers, included in the sample from all 6 districts, only 12% of teachers are currently

using technology in clarification on topics, 25% think it has potential but not using, 37% as fast grasping, 30% said they are planning to use in near future and 26% said they need training for the use of technology in clarification on topics.

**e) Status of Use of Technology by Teachers in New Teaching Methodology:**

An examination of data vide Table- 4.14 shows that out of 240 teachers, included in the sample from all 6 districts, no one is currently using technology in new teaching methodology, and 29% reported to have a plan to use it in near future. On the other hand 71% said they need training for the use of technology in new teaching methodology.

**f) Status of Use of Technology by Teachers in Preparing Test Papers:**

A perusal of data vide Table-4.14 shows that out of 240 teachers, included in the sample from all 6 districts, only 21% of teachers are currently using technology in preparing test papers, 16% think it has potential but not using, 29% as fast grasping, 30% said they are planning to use in near future and 34% said they need training for the use of technology in preparing test papers.

**g) Status of Use of Technology by Teachers in Assessment and Evaluation:**

A quick glance at the Table-4.14 shows that out of 240 teachers, included in the sample from all 6 districts, only 4% of teachers are currently using technology in assessment and evaluation, 36% think it has potential but not using, 32% as fast grasping, 30% said they are planning to use in near future and 28% said they need training for the use of technology in assessment and evaluation.

**h) Status of Use of Technology by Teachers in Administration:**

Table-4.14 shows that out of 240 teachers, included in the sample from all 6 districts, no teachers is currently using technology in administration,;

**Table 4.14**

**Areas in Which Teachers Apply or Planning to Apply Technology in Schools**

**(N=40 Teachers from Each District)**

Sl. No	Criteria of Rating	District	Areas in Which Teachers Apply OR Planning to Apply Technology in Schools			
			Currently using	Has potential but not using	Planning to use in near future	Need training
1	Teaching	Aizawl	5(12%)	9((22%)	12((30%)	14(35%)
		Champhai	4(10%)	10(25%)	15(38%)	11(27%)
		Kolasib	6((15%)	8(20%)	10(25%)	16(40%)
		Lawngtlai	2(5%)	7(17%)	12((30%)	19(48%)
		Lunglei	3(7%)	9(22%)	13(32%)	15(37%)
		Saiha	1(2%)	10(25%)	11(27%)	18(45%)
		<b>Total</b>	<b>21(9%)</b>	<b>53(22%)</b>	<b>73(30%)</b>	<b>93(39%)</b>
2	Preparing Lesson Plans	Aizawl	8(20%)	9(22%)	11(27%)	12((30%)
		Champhai	7(17%)	9(22%)	13(32%)	11(27%)
		Kolasib	6((15%)	10(25%)	15(38%)	9(22%)
		Lawngtlai	-	8(20%)	18(45%)	14(35%)
		Lunglei	7(17%)	11(27%)	12((30%)	10(25%)
		Saiha	-	12((30%)	20(50%)	8(20%)
		<b>Total</b>	<b>28(12%)</b>	<b>59(25%)</b>	<b>89(37%)</b>	<b>64(26%)</b>



<b>3</b>	<b>Research</b>	Aizawl	-	-	-	40(100%)
		Champhai	-	-	-	40(100%)
		Kolasib	-	-	-	40(100%)
		Lawngtlai	-	-	-	40(100%)
		Lunglei	-	-	-	40(100%)
		Saiha	-	-	-	40(100%)
		<b>Total</b>	-	-	-	<b>240(100%)</b>
<b>4</b>	<b>Clarification on topics</b>	Aizawl	6((15%))	7(17%)	12((30%))	15(38%)
		Champhai	5(12%)	8(20%)	10(25%)	17(43%)
		Kolasib	6((15%))	6((15%))	12((30%))	16(40%)
		Lawngtlai		9(22%)	13(32%)	18(45%)
		Lunglei	4(10%)	8(20%)	15(38%)	13(32%)
		Saiha		9(22%)	20(50%)	11(27%)
		<b>Total</b>	<b>21(9%)</b>	<b>47(20%)</b>	<b>82(34%)</b>	<b>90(37%)</b>
<b>5</b>	<b>New teaching methodology</b>	Aizawl	-	-	12((30%))	28(70%)
		Champhai	-	-	15(37%)	25(63%)
		Kolasib	-	-	13(32%)	27(68%)
		Lawngtlai	-	-	9(22%)	31(78%)
		Lunglei	-	-	11(27%)	29(73%)
		Saiha	-	-	10(25%)	30(75%)
		<b>Total</b>	-	-	<b>70(29%)</b>	<b>170(71%)</b>

<b>6</b>	<b>Preparing test papers</b>	Aizawl	12((30%))	5(12%)	8(20%)	15(37%)
		Champhai	11(27%)	7(17%)	7(17%)	15(37%)
		Kolasib	12((30%))	6((15%))	9(22%)	13(32%)
		Lawngtlai	2(5%)	8(20%)	12((30%))	18(45%)
		Lunglei	10(25%)	3(7%)	15(38%)	12((30%))
		Saiha	3(7%)	10(25%)	18(45%)	9(22%)
		<b>Total</b>	<b>50(21%)</b>	<b>39(16%)</b>	<b>69(29%)</b>	<b>82(34%)</b>
<b>7</b>	<b>Assessment and evaluation</b>	Aizawl	2(5%)	18(45%)	12((30%))	8(20%)
		Champhai	2(5%)	16(40%)	14(35%)	8(20%)
		Kolasib	3(7%)	17(43%)	9(22%)	11(27%)
		Lawngtlai	-	10(25%)	15(37%)	15(37%)
		Lunglei	2(5%)	12((30%))	16(40%)	10(25%)
		Saiha	-	13(32%)	11(27%)	16(40%)
		<b>Total</b>	<b>9(4%)</b>	<b>86(36%)</b>	<b>77(32%)</b>	<b>68(28%)</b>
<b>8</b>	<b>Administrative</b>	Aizawl	-	9(22%)	17(43%)	14(35%)
		Champhai	-	7(17%)	15(37%)	18(45%)
		Kolasib	-	8(20%)	18(45%)	14(35%)
		Lawngtlai	-	3(7%)	13(32%)	24(60%)
		Lunglei	-	4(10%)	16(40%)	20(50%)
		Saiha	-	5(12%)	15(38%)	20(50%)
		<b>Total</b>	<b>-</b>	<b>36(15%)</b>	<b>94(39%)</b>	<b>110(46%)</b>

9	Self professional development	Aizawl	3(7%)	6((15%)	13(32%)	18(45%)
		Champhai	2(5%)	7(17%)	12((30%)	19(48%)
		Kolasib	2(5%)	6((15%)	15(37%)	17(43%)
		Lawngtlai	1(2%)	4(10%)	13(32%)	22(55%)
		Lunglei	3(7%)	5(12%)	12((30%)	20(50%)
		Saiha	1(2%)	2(5%)	14(35%)	23(58%)
		<b>Total</b>	<b>12(5%)</b>	<b>30(12%)</b>	<b>79(33%)</b>	<b>119(50%)</b>
10	Educational recreation	Aizawl	-	-	22(55%)	18(45%)
		Champhai	-	-	20(50%)	20(50%)
		Kolasib	-	-	19(48%)	21(53%)
		Lawngtlai	-	-	17(42%)	23(58%)
		Lunglei	-	-	25(63%)	15(37%)
		Saiha	-	-	23(58%)	17(42%)
		<b>Total</b>	-	-	<b>126(53%)</b>	<b>114(47%)</b>

15% think it has potential but not using, 39% said they are planning to use it in near future, and 46% said they need training for the use of technology in administration.

**i) Status of Use of Technology by Teachers in Self Professional Development:**

An analysis of data vide Table- 4.14 shows that out of 240 teachers, included in the sample from all 6 districts, only 5% of teachers are currently using technology in self professional development, 12% think it has potential but not using, 33% said they are planning to use it in near future and 50% said they need training for the use of technology in self professional development.

**j) Status of Use of Technology by Teachers in Educational Recreation:**

Out of the 240 teachers included in the sample from all 6 districts, no teachers are currently using technology for educational recreation, 53% said they are planning to use in near future and 47% said they need training for the use of technology for educational recreation.

**4.15. Teachers' Perception on Level of Effectiveness of Technology in Overcoming Hard Spots**

Analysis of data relating to the levels of effectiveness of technology in overcoming hard spots in teaching of various school subjects has been given in Table 4.15.

**a. Teachers Perception on Level of Effectiveness of Technology in Overcoming Hard Spots in Teaching of English:**

An examination of data vide Table-4.15 relating to perceptions of teachers, reveals that none of the 240 teachers, included in sample from the 6 districts, thinks that use of technology can be very effective in overcoming hard spots in teaching of English in schools, 8% perceive it as effective, 25% think it will be no better than chalk and talk method, 40% said that it is not effective, and 27% said they have not explored much of its use in teaching of English.

**b. Teachers Perception on Levels of Effectiveness of Technology in Overcoming Hard Spots in Teaching of Math:**

An examination of data vide Table-4.15 relating to perceptions of teachers, reveals that none of the 240 teachers, included in sample from the 6 districts, thinks that use of technology can be very effective in overcoming hard spots in teaching of math in schools, 28% perceive it as effective, 55% think it will be no better than chalk and talk method, 6% said that it is not effective, 11% said they have not explored much of its use in teaching of Math.

**c. Teachers Perception on Levels of Effectiveness of Technology in Overcoming Hard Spots in Teaching of Science:**

A perusal of data vide Table-4.15 relating to perceptions of teachers, reveals that out of 240 teachers, included in sample from the 6 districts, 28% perceived it as very effective in overcoming hard spots in teaching of science in schools, 44% perceived it as effective, 11% think it will be no better than chalk and talk method, 40% said that it is not effective, 17% said they have not explored much of its use in teaching of Science.

**d. Teachers Perception on Levels of Effectiveness of Technology in Overcoming Hard spots in Teaching of Social Studies**

A quick glance at data vide Table-4.15 relating to perceptions of teachers, reveals that out of 240 teachers, included in sample from the 6 districts, 26% perceived it as very effective in overcoming hard spots in teaching of social studies in schools, 4% perceived it as effective, 37% think it will be no better than chalk and talk method, 3% said that it is not effective, 30% said they have not explored much of its use in teaching of social studies.

**Table 4.15**  
**Teachers' Perception on Level of Effectiveness of Technology in Overcoming Hard Spots in Subject Teaching**  
**(N=40 Teachers from Each District)**

Subject	District	Levels of Effectiveness of Technology in Overcoming Hard-spots in Subject Teaching				
		Very Effective	Effective	Like Chalk & Talk Method	Not Effective	Not Explored much
English	Aizawl	-	4(10%)	5(12%)	18(45%)	13(33%)
	Champhai	-	3(7%)	6(15%)	9(23%)	22(55%)
	Kolasib	-	3(7%)	8(20%)	19(48%)	10(25%)
	Lawngtlai	-	2(5%)	10(25%)	15(38%)	13(32%)
	Lunglei	-	5(12%)	14(35%)	17(43%)	4(10%)
	Saiha	-	2(5%)	16(40%)	18(45%)	4(10%)
	<b>Total</b>	-	<b>19(8%)</b>	<b>59(25%)</b>	<b>96(40%)</b>	<b>66(27%)</b>
Mathematics	Aizawl	-	12(30%)	20(50%)	-	8(20%)
	Champhai	-	10(25%)	21(53%)	2(5%)	7(17%)
	Kolasib	-	15(38%)	20(50%)	3(7%)	2(5%)
	Lawngtlai	-	8(20%)	24(60%)	5(12%)	3(7%)
	Lunglei	-	13(33%)	25(62%)		2(5%)
	Saiha	-	9(23%)	21(53%)	5(12%)	5(12%)
	<b>Total</b>	-	<b>67(28%)</b>	<b>131(55%)</b>	<b>15(6%)</b>	<b>27(11%)</b>
Sciences	Aizawl	10(25%)	23(58%)	2(5%)	-	5(12%)
	Champhai	12(30%)	29(73%)	4(10%)	-	5(12%)

	Kolasib	12(30%)	17(43%)	5(12%)	-	6(15%)
	Lawngtlai	9(23%)	19(48%)	4(10%)	-	8(20%)
	Lunglei	16(40%)	12(30%)	5(12%)	-	9(23%)
	Saiha	8(20%)	15(38%)	6(15%)	-	11(27%)
	<b>Total</b>	<b>67(28%)</b>	<b>105(44%)</b>	<b>26(11%)</b>	<b>-</b>	<b>42(17%)</b>
Social Studies	Aizawl	12(30%)	-	15(38%)	-	13(32%)
	Champhai	10(25%)	-	12(30%)	-	18(45%)
	Kolasib	11(27%)	-	16(40%)	-	13(33%)
	Lawngtlai	9(23%)	2(5%)	19(48%)	3(7%)	7(17%)
	Lunglei	13(33%)	8(20%)	12(30%)	-	7(17%)
	Saiha	8(20%)	-	13(33%)	5(12%)	14(35%)
	<b>Total</b>	<b>63(26%)</b>	<b>10(4%)</b>	<b>87(37%)</b>	<b>8(3%)</b>	<b>72(30%)</b>

### **SECTION-III**

#### **ANALYSIS OF DATA RELATING TO RESPONSES OF ICT TEACHERS**

A separate questionnaire was used to find out certain issues related to ICT use by ICT teachers. It is however necessary to mention here that except for two (2) schools in Kolasib District, all the other districts had regular/contract teachers assigned the task of handling ICT in the school. On the basis of their responses, the following analysis was made

#### **4.16 Educational Qualifications, Nature and Mode of Appointment of ICT Teachers**

In almost all the schools taken as sample for the present study, teachers were not appointed from ICT scheme. Rather, one teacher from the existing teachers was given the task of looking after ICT in the school. Out of the 60 ICT teachers taken as sample, 49 were regular teachers appointed on a permanent basis while 11 were appointed on contract basis. There were two (2) ICT teachers appointed by the school out of their own resources. No ICT teacher was provided by the vendor. As these ICT teachers were from the general existing teachers, very few of them possess qualification related to ICT. There were 6 teachers with M.A/M.Sc./MCA/ with B.Ed., 1 teacher having MA with Diploma in Computer Application, 41 of them were having BA/B.Sc. with B.Ed., 1 teacher having B.Sc. was with DCA. There was 1 (one) teacher with B. Tech degree and 1 with B.E, B.Ed. There were also 2 teachers with a qualification of HSSLC only.

#### **4.17 Nature and Duration of Training of ICT Teachers**

A perusal of the above Table – 4.17 indicates that out of a total of 60 ICT teachers, only 32 (53%) had undergone training in connection with ICT. Out of these, 30 (50%) had attended 10 days training organized by SCERT, 1 had attended 4 days training which was also conducted by SCERT. 1 ICT had undergone 6 month Diploma in Computer.



**Table 4.16****Educational Qualifications, Nature and Mode of Appointment of ICT Teachers in Sample schools in Mizoram**

<b>Sl. No</b>	<b>Particulars</b>		<b>Aizawl</b>	<b>Champhai</b>	<b>Kolasib</b>	<b>Lawngtlai</b>	<b>Lunglei</b>	<b>Saiha</b>	<b>Total</b>
1	Nature of Appointment	Regular	10	6	10	7	7	9	<b>49</b>
		Contract	Nil	4	Nil	3	3	1	<b>11</b>
2	Mode of Recruitment	Provided by Vender	Nil	Nil	Nil	Nil	Nil	Nil	<b>Nil</b>
		Recruited by School	Nil	Nil	2	Nil	Nil	Nil	<b>2</b>
3	Educational Qualification	M.A/ M.Sc./ MCA, B.Ed.	3	Nil	1	1	Nil	1	<b>6</b>
		M.A., DCA	Nil	Nil	Nil	Nil	Nil	1	<b>1</b>
		B.A/ B.Sc ., B.Ed.	7	6	6	6	10	6	<b>41</b>
		B.Sc., DCA	Nil	2	2	Nil	Nil	Nil	<b>4</b>
		B.Tech	Nil	1	Nil	Nil	Nil	Nil	<b>1</b>
		B.E.,B.Ed	Nil	Nil	Nil	1	Nil	Nil	<b>1</b>
		B.A./ B.Com	Nil	Nil	Nil	2	Nil	2	<b>4</b>
		HSSLC	Nil	1	1	Nil	Nil	Nil	<b>2</b>

**Table 4.17**  
**Nature and Duration of Training of ICT Teachers in Sample Schools in Mizoram**

Sl. No	Training	Type and Duration Of Training	Aizawl	Champhai	Kolasib	Lawngtlai	Lunglei	Saiha	Total
1	Nature of Training	Induction & Orientation Training Organized by SCERT, Mizoram	7 (70%)	3 (30%)	4 (40%)	5 (50%)	8 (80%)	5 (50%)	32 (53%)
2	Duration of Training	10 days	6 (60%)	3 (30%)	4 (40%)	4 (40%)	8 (80%)	5 (50%)	30 (50%)
		4 Days	1 (10%)	Nil	Nil	Nil	Nil	Nil	1 (1.7%)
		6 month Diploma				1 (10%)			1 (1.7%)

***\*Figures and percentages in cells indicate number and percentages of teachers who attended ICT training***

#### **4.18 Use of ICT by ICT Teachers**

An analysis of the Table-4.18 reveals that ICT as a subject was not given much importance by the schools in Mizoram. As per the Table-4.18 as many as 44 teachers (73.33%) used less than an hour in a week to teach ICT as a subject, 14 (23.33%) spent 1 to 2 hours to teach ICT in a week while only (3.33%) of the teachers used more than two hours in a week to teach it as a subject.

The number of classes taken by ICT teacher was only 1 class by 34 (56.67%) while the rest 26 (43.33%) were taking 2 classes.

#### **4.19 ICT Related Challenges Encountered by ICT teachers while working in school**

The ICT teachers were asked to share the challenges they encountered while working in school as ICT teachers. The common and general challenges they put forth are as follows:-

1. Lack of interest by many students who could not be convinced about its importance as the subject was no longer in the compulsory subject of study.
2. Less number of computer sets which made it difficult for them to teach more number of students at a time.
3. Poverty of majority of students especially in rural districts which resulted in students' lack of interest.
4. Irregular power supply.
5. No internet connection.
6. No regular teacher for ICT.

#### **4.20 Suggestions for better utilization of ICT resources**

1. If more sets of computers could be supplied, there would be opportunity for more students to practically work on them which will have better impact on them.
2. If Internet Connection could be bought from other service provider, then many of the internet related problems could be solved.

**Table 4.18**  
**Use of ICT by ICT Teachers of Sample Schools in Mizoram**

Sl. No	Districts	Hours spent in a week to teach ICT as a subject			No. of Classes taken	
		0-1hour	1 to 2 hours	More than 2 hours	1 class	2 classes
1.	Aizawl	6	4	0	6	4
2.	Champhai	9	1	0	2	8
3.	Kolasib	5	3	2	4	6
4.	Lawngtlai	7	3	0	8	2
5.	Lunglei	8	2	0	8	2
6.	Saiha	9	1	0	6	4
	<b>Total</b>	<b>44</b>	<b>14</b>	<b>2</b>	<b>34</b>	<b>26</b>

3. Computer Education may again be introduced as a separate subject which will create more interest in the students.
4. Funds for maintenance and repair may be provided at least on an annual basis.
5. Training to cover more teachers and for a longer duration of period must be organized.
6. If training could be organized at the district level and made mandatory, the result would be more effective.

## **SECTION-IV**

### **ANALYSIS OF DATA RELATING TO RESPONSES OF STUDENTS**

#### **4.21 Students Perception of Their Own Computer Related Skills:**

Perusal of data Vide Table-4.21 below reveals that, none of the 240 students, included in the sample from 60 schools of 6 districts, perceived their computer related skills as excellent. Further almost half (49%) of students considered these skills as bad. Only 18% and 44% of sample students perceived their computer skills as good and average, respectively. From these statistical findings one can easily understand the gravity of situation. Further a district wise comparison shows that this situation in southern districts of Mizoram namely Lawngtlai and Saiha is much more serious. However, it was bit relieving to know that in Aizawl district 12% of students perceived their computer skills as good and another 58% perceived them as average.

#### **4.22 Sources of Students Learning of Computer Applications:**

When asked about who taught them first working on computer it was surprising to know that 31% of the sample students reported to have learned from their friends, 17% reported that they learned at their own, and 26% said they learned from their parents. It was shocking to know that only 26% of students reported to have learned first working on computers from their teachers. An overall analysis of these percentages suggests that only one fourth of students have learned about computer through teachers, whereas three fourth of students have learned either from friends, or parents or through self

**Table 4.21**  
**Students' Perception of Their Own Skills in the Use of Computer Application**

District	Students' Perception of Level of Their Own Skills in the Use of Computer Application(N=40 Students from each district)			
	Bad	Average	Good	Excellent
Aizawl	12(30%)	23(58%)	5(12%)	Nil
Champhai	18(45%)	20(50%)	2(5%)	Nil
Kolasib	19(48%)	17(42%)	4(10%)	Nil
Lawngtlai	25(62%)	14(35%)	1(3%)	Nil
Lunglei	16(40%)	20(50%)	4(10%)	Nil
Saiha	27(68%)	11(27%)	2(5%)	Nil
<b>Total</b>	<b>117(49%)</b>	<b>105(44%)</b>	<b>18(7%)</b>	Nil

**Table 4.22**  
**Sources of Students Learning of Computer Applications (N=40 Students from each district)**

District	Who Taught you First Working on Computer?				Where Did You Learn Computer?		
	Teachers	Self	Parents	Friends	At School	Any Other Place	
						Home	Friend's House
Aizawl	13(33%)	10(25%)	8(20%)	9(22%)	20(50%)	10(25%)	10(25%)
Champhai	12(30%)	6(15%)	7(17%)	15(38%)	16(40%)	8(20%)	16(40%)
Kolasib	9(23%)	6(15%)	12(30%)	13(32%)	18(45%)	10(25%)	12(30%)
Lawngtlai	7(17%)	8(20%)	15(38%)	10(25%)	13(32%)	12(30%)	15(38%)
Lunglei	12(30%)	5(12%)	8(20%)	15(38%)	16(40%)	14(35%)	10(25%)
Saiha	9(23%)	6(15%)	12(30%)	13(32%)	15(38%)	10(25%)	15(37%)
<b>Total</b>	<b>62(26%)</b>	<b>4(17%)</b>	<b>62(26%)</b>	<b>75(31%)</b>	<b>98(41%)</b>	<b>64(27%)</b>	<b>78(32%)</b>

efforts. From these findings one can conclude that the contribution of parents, friends and self efforts of students in learning to work on computer is much larger than the school teachers. Further, while responding to the question 'where did they learn computer', only 41% Of them reported to have learned it in school, whereas 27% and 32% said they first learned working on computers at home and friends house, respectively. A district wise analysis in relation to contribution of school teachers in learning about computer shows that the situation is relatively better in Aizawl, Lunglei and Champhai districts, and very poor in other three districts, namely Kolasib, Lawngtlai and Saiha.

#### 4.23 Favorite Activities of Sample Students in Using Computers

A quick glance at data vide Table-4.22 shows that looking at images, and looking at videos is the favorite activities of 67% of sample students, whereas chatting /social net working is the favorite activity of only 13% students. On the other hand playing games is the favorite activity of 52% of sample students. Further, a district wise comparison shows that in Kolasib district 100% students used computers for looking at images and videos. In all 6 sample districts 50% to 60% students reported playing games as their favorite activity, 50% to 100% reported looking at images and videos as favorite activities. However, only 10% to 30% reported chatting/networking as favorite activity. The low percentage of students reporting chatting/networking as favorite activity may be due to the non availability or non-functioning of internet in some sample schools.

**Table 4.23**  
**Favorite Activities of Sample Students in Using Computers**  
**(N=40 Students from each district)**

District	Favorite Activities of Sample Students in Using Computers			
	Looking at Different Images	Looking at Videos	Chatting/ Social Net working	Any Other Specify (Playing Games)
Aizawl	20(50%)	20(50%)	8(20%)	24(60%)
Champhai	24(60%)	20(50%)	4(10%)	20(50%)
Kolasib	40(100%)	40(100%)	12(30%)	24(60%)
Lawngtlai	24(60%)	28(70%)	-	16(40%)



Lunglei	28(70%)	24(60%)	4(10%)	20(50%)
Saiha	32(80%)	28(70%)	4(10%)	20(50%)
<b>Total</b>	<b>160(67%)</b>	<b>160(67%)</b>	<b>32(13%)</b>	<b>124(52%)</b>

#### 4.24 Frequency of Use of ICT in School by Students for Different Purposes:

Frequency and purpose of use of ICT by students in schools is one of the important concerns of introduction of ICT scheme in secondary schools. Analysis of students' responses to the question of frequency and purpose of use of ICT, vide Table-4.23, reveals that 98% of them do not use ICT (email and internet) for communication to exchange and transmit information with other students, teachers and to join discussion forms and chat.

Likewise, 90% of sample students do not use ICT to compose, compile, produce new information (write papers, drawing, PPT, prepare news letter, create own website) The picture for the use of ICT to acquire information and its functional use is also very discouraging as 56% of sample students do not at all use ICT for the said two purposes. And at the same time a considerably large number of the remaining 44% of students who claimed to have used ICT for the first two purpose, namely, to acquire information, and its functional use; rarely use it for the aforesaid first two purposes. Further a district wise comparison of shows that the frequency of use of ICT by sample students is relatively better in Aizawl, Kolasib and Lunglei districts and worst in the remaining three districts, namely, Lawngtlai, Saiha and Champhai.

**Table 4.24****Frequency of Use of ICT in School by Students for Different Purposes (N=40 Students from each district)**

Purpose of Use of ICT by Students	District	Frequency of Use of ICT by Sample Students in School for Different Purposes				
		Very often	Often (Twice or more in a week)	Some times (Few times in a week)	Rarely (once in several months)	Not at all
<b>Information:</b> <i>To find acquire and use</i>	Aizawl	-	10(25%)	16(40%)	-	14((35%)
	Champhai	-	4(10%)	4(10%)	12(30%)	20(50%)
	Kolasib	-	2(3%)	6(15%)	14((35%)	18(45%)
	Lawngtlai	-	-	6(15%)	8(20%)	26(65%)
	Lunglei	-	4(10%)	4(10%)	8(20%)	24(60%)
	Saiha	-	-	4(10%)	4(10%)	32(80%)
	<b>Total</b>	-	<b>20(8%)</b>	<b>40(17%)</b>	<b>46(19%)</b>	<b>134(56%)</b>
<b>Functional:</b> <i>To use, manipulate, &amp;compare information, and do homework</i>	Aizawl	-	10(25%)	16(40%)	-	14((35%)
	Champhai	-	4(10%)	4(10%)	-	20(50%)
	Kolasib	-	2(3%)	6(15%)	-	18(45%)
	Lawngtlai	-	-	6(15%)	-	26(65%)
	Lunglei	-	4(10%)	4(10%)	-	24(60%)
	Saiha	-	-	4(10%)	-	32(80%)
	<b>Total</b>	-	<b>20(8%)</b>	<b>40(17%)</b>	<b>46(19%)</b>	<b>134(56%)</b>
<b>Creating:</b> <i>To Compose, compile,</i>	Aizawl	-	-	4(10%)	4(10%)	32(80%)
	Champhai	-	-	-	4(10%)	36(90%)

<i>produce new information (write papers, drawing, PP, Prepare news letter, create own website)</i>	Kolasib	-	-	-	4(10%)	36(90%)
	Lawngtlai	-	-	-	-	40(100%)
	Lunglei	-	-	4(10%)	4(10%)	32(80%)
	Saiha	-	-	-	-	40(100%)
	<b>Total</b>	-	-	<b>8(3%)</b>	<b>16(7%)</b>	<b>216(90%)</b>
<b>Communication:</b> <i>To exchange and transmit information with other students, teachers and others using email and internet, and to join discussion forms and chat</i>	Aizawl	-	-	-	4(10%)	36(90%)
	Champhai	-	-	-	-	40(100%)
	Kolasib	-	-	-	-	40(100%)
	Lawngtlai	-	-	-	-	40(100%)
	Lunglei	-	-	-	-	40(100%)
	Saiha	-	-	-	-	40(100%)
	<b>Total</b>	-	-	-	<b>4(2%)</b>	<b>236(98%)</b>

## **Chapter-5**

### **Implementation of ICT @ School Scheme Mizoram: A Qualitative Assessment**

#### **5.0. Focus Group Discussions**

As explained in earlier chapters Focused Group Discussions (FGDs) with teachers were conducted in five schools in each of the selected districts. Headmasters/Principals, ICT teachers, subject teachers and administrative staffs were also allowed to participate in the FGDs, so as to get a wider view in the successful implementation of the ICT @ School Scheme. Major issues discussed were the availability of ICT infrastructure, usage of computers by teachers; computer training to teachers; capacity building and skill development of teachers in computing; student's interest in computers; effect of ICT on student's achievement, motivation, learning and attitude towards learning; and barriers to ICT integration in teaching- learning.

#### **5.1. Method of Qualitative Data Analysis in FGDs**

The qualitative responses on focus group discussions were analyzed by means of content analysis. Data reduction, data display, and conclusion drawing phases were employed in this process. The content of open - ended focused group discussions with teachers and students was coded and organized according to the identified themes. The data based on themes was organized and labeled into structured summaries. The conclusions were drawn by comparing, contrasting and clustering the displayed data.

## 5.2. Issues taken up in FGD

The major areas of discussion with teachers were the usage of computers by teachers; computer training to teachers; capacity building and skill development of teachers in computing; student's interest in computers; effect of ICT on student's achievement, motivation, learning and attitude towards learning;; duties of computer teachers; and barriers to ICT integration in teaching- learning.

## 5.3 District wise Details of FGDs

In all selected District, Focus Group Discussion (FGD) with teachers were conducted in five schools each. FGD was conducted in an interesting way and teachers were encouraged to come out with their problems and challenges they are facing in implementing ICT@school Scheme. In FGD with teacher, various issues pertaining to ICT was discussed. Teachers actively participated in FGD. On the issue of usage of computer by teachers, computer training, school infrastructure, suggestions for better utilization, etc. were discussed in FGD.



***FGD with Teachers at Ch.Chhunga HS (Aizawl)***

In almost all school as soon as the FGD was started, teacher raised issues on the readiness of the school to receive this scheme. From the light of

the discussion, it is very clear that most schools were not ready to receive ICT@school scheme. In those schools, there is no computer teacher, no prescribed course to be taught, and no adequate room for computer lab, electricity connection problem, etc. they recommended and suggested that if the school is to receive this scheme it should be made ready first so that the scheme can be successfully implemented, and more beneficial and useful for the students and the teachers.

From the FGD it was revealed that, those teachers who were serving for more than twenty years had no or less interest in computer education. At the same time, those teachers who were young and interested in computer also did not know how and what to teach, as there was neither any guidelines nor prescribe syllabus for ICT. Some teachers were of the opinion that provision of projector without laptop has very limited utility as it was not possible to carry CPU to and from different classrooms. Teachers having valid email ID were less in number. Computer aided teaching or learning was almost impossible since majority of the teachers were computer illiterate and those teachers who were computer literate also had limited knowledge about computer.



***FGD with Teachers at Govt. Champhai HS***

Only about 30 percent of the school arranged a period for ICT in the time table. Majority of the school did not have separate period for ICT in the time table. They reported that computer education was given to the students every Friday afternoon in co-curricular activities period. It was reported that, some schools have a large number of students and the computer they received cannot accommodate all students. In some schools to make justice on usage of computer by the students, arrangement was made by dividing the students into group and assigned a specific period for each group.



***FGD with Teachers at Govt. Pangzawl HS (Lunglei)***

One of the major problems faced by almost all schools was that they did not have separate teacher for ICT and the school assigned general teacher, who may or may not be an expert to handle ICT subject besides their normal work.

Majority of the teacher's did not undergo any training on computer or ICT. The SCERT often organized induction training on ICT for teachers and it was reported that, the training provided to them was not sufficient enough to successfully implement the ICT@school scheme at the school level and the duration of training is too short to learn those skills which were necessary to handle ICT as a subject.

Although there were many problems and obstacles to use ICT at school, majority of teachers were of the opinion that, if the program is implemented properly, it will play a crucial role in developing the standards of education in the state.



***FGD with Teachers at Vairengte HS (Kolasib)***

One of the major problems faced by the schools was the maintenance problem. Some of the computers supplied to the school needs repair but it took too much time to repair those computers and they were not allowed to fix the damage computers by themselves. Sometimes, they did not get any response from the authority after lodging a complaint. Since teachers were not aware of the ICT@school scheme, they did not know whether they received the facilities in full or in partial. Majority of the teachers were unaware of the scheme and they did not know the implementing agency. This was because they were not formally informed about the scheme and the facilities and equipments they received. Teachers were informed about the scheme in FGD and after realizing



the nature of the scheme, they were motivated and willing to give more efforts on ICT.



***FGD with Teachers at GZHS Zobawk, Lunglei***

Regarding the use of computer by the students, no gender gap was found. They were very enthusiastic about computer education. At the same time, some students who are from low socio-economic background and who do not have computer at home were reluctant to learn and use computer.

Majority of the schools did not have internet connection at school. This is mainly because of the absence of broadband internet provider. They were not allowed to spend the internet fund they received to procure portable internet devices or dongle. They reported that, internet is accessible only through the aforesaid devices. If they were allowed to purchase those devices, it will be quite helpful and beneficial for the teacher to enhance their knowledge and for the students; it will be an eye opener to the globalized world.



***FGD with Teachers at ECM HS Saiha***

The teachers reported that in the newly constructed school building under RMSA, the provision for computer room was too small and could not accommodate more than 20 students at a time. To impart computer education successfully, the provisions for more computer and bigger room is needed.



***Students working in computer lab***

#### **5.4. Issues and Concerns Expressed in FGDs**

The important issues that were highlighted by majority of participants in FGD can be summarized as follows

1. No separate teacher for computer/ICT education in almost all schools.
2. Supply of computers to schools without verifying their preparedness in terms of availability of required space for the establishment of computer labs.
3. No prescribed syllabus for Computer/ICT education.
4. No slot for Computer/ICT education in the time table in majority of school.
5. Little or no interest shown by senior teachers in computer and computer aided teaching.
6. Limited use of projector in classroom teaching without laptop.
7. Number of computers supplied to the school and the size of computer lab cannot accommodate all students of a particular class.
8. No training of majority subject teachers on computer/ICT education
9. Those who undergone training reported that the training provided to them was not sufficient enough and the duration of training was too short.
10. Problem of repair and maintenance of computers in almost all schools. maintenance problem.
11. Non-availability of generators in many schools for backup in case of disrupted power supply.
12. Too much time to repair the damaged computers after lodging a complaint.
13. Hesitation among students from low socio-economic background to learn and use computers
14. Non-availability of internet connection in most schools
15. Large number of computer illiterate teachers.
16. Limited knowledge about computer even among those teachers, who claimed to be computer literate.
17. Less time for practice to students.
18. Non-availability of computers teachers' common rooms.
19. Non availability of ROT/SIT facility under EDUSAT in all schools.

### **5.5. Suggestions Emerged from FGDs**

The following suggestions were given by teachers for the successful implementation of the ICT @ School Scheme in Mizoram:

1. Appointment of separate ICT teachers in all schools with required qualification.
2. Supply of more computers to schools with consistently higher enrollment.
3. Quality, duration and frequency of in-service training in ICTs to be improved.
4. Installment of computers in teachers' common room or staff room.
5. Computer/ICT education syllabus of pre-service training should be developed with an active coordination between SCERT, Mizoram; IASE, Aizawl; Department of Education Mizoram University etc.
6. Clear cut guidelines from state department of education need to be issued to schools for inclusion of ICT classes in school time table.
7. Provision of at least one period per day for each class should be made for Computer/ICT education, so as to provide adequate time to students for theory and practice classes.
8. Special training courses for subject teachers to facilitate integration of ICT in subject teachings.
9. School level expert/technical support to teachers to use ICT tools and materials in classroom instruction.
10. Conduct of special training courses for ICT teachers with the involvement of reputed institutes in computer education.
11. Capacity building of ICT teachers need to be done regularly.
12. In case of non-availability of broad band internet connection schools should be allowed to procure dongles.
13. ICT training for headmasters/Principals.
14. Provision of generators to all schools covered under ICT@School, Scheme.
15. Computer/ICT labs in DIETs, CTEs and IASEs, RIEs, and Department of Education (offering teacher education programs) need to be strengthened for both pre-service and in-service teachers' training in ICT.

16. Strengthening of SCERT in terms infrastructure and manpower to provide in-service training to teachers on the effective use ICT tools in teaching learning processes.
17. Provision of ROT/SIT facility under EDUSAT to all schools

#### **5.4. Summary of Focus Group Discussions**

A comparison of quantitative data; collected from field with the help of various questionnaires/information schedules; and qualitative data emerged from FGDs, shows that there is a strong agreement between the open ended focused group discussions and closed ended responses of headmasters, ICT teachers, subject teachers and students to similar questions in questionnaires/information schedules.:

## **Chapter – 6**

### **ICT@ School Scheme in Mizoram Major Findings, Conclusion and Suggestions**

#### **6.0. Major Findings and Suggestions**

The major conclusions and suggestions regarding the ICT @ School Scheme in the six selected districts of Mizoram are summarized as follows:

#### **6.1. Findings and Suggestions Related to Physical Infrastructure for ICT Education:**

##### **a) Findings**

1. The Computer laboratories are not available in 35% of sample schools.
2. Inadequate number of schools in many schools.
3. Computers were available but not installed in many schools as the civil work for construction of computer labs was still on.
4. E- Libraries were not installed in any sample schools of schools.
5. EDUSAT-ROT/SIT facility was not available in any sample schools.
6. Generators, for back up supply, were not available in 62% schools.
7. Internet connection was not available in almost all schools. .
8. Printer/ UPS were available in all schools.
9. Computers purchased on Outright Purchase model.
10. Inadequate provisions for maintenance of Computers and related technologies, especially in remote areas.

**b) Suggestions:**

1. Separate Computer labs to be provided in all schools covered under ICT@School Scheme.
2. Computers need to be quickly installed after the completion of civil work relating to computer works. E- Libraries were not installed in any sample schools of schools.
3. ROT/SIT need to be installed in all schools.
4. Generators, for back up supply, should be provided to all schools.
5. Internet connection needs to be provided on priority bases.
6. In view of non availability of Broad band connections, schools may be allowed to purchase dongles.
7. Reliable and dependable provision need to be made for maintenance of hardware and software.
8. ROT/SIT facility under EDUSAT needs to be provided in all schools and a special EDUSAT rooms need to be constructed in schools.
9. Schools with the track record of larger enrolment be provided with more computers.
10. Non-functional computers should either be repaired or replaced by new computers.

**6.2. Findings and Suggestions Related to Teaching of ICT**

**a) Findings**

1. Computer education curriculum not developed.
2. Slot for computer education, as such, not reflected in time table of most sample schools.
3. Separate and full time computer teachers not appointed in any school. Computer education book not given to students.
4. In service teachers' capacity building not adequate.
5. Teachers using computers only for typing of school reports, question papers and other routine activities.

**b) Suggestions:**

1. Computer education curriculum need to be developed.
2. All schools be advised to create separate period for ICT education.
3. Computer education should also be revised as per new operating systems.
4. More time for practice on computers to be given to students.
5. More rigorous in service training for computer education required for teachers.
6. In pre-service training at M.Ed/B.Ed/ETT level, computer curriculum need to be incorporated as compulsory subject.
7. Teachers' capacity building for developing digital teaching aids and to use technology based pedagogy need to be done seriously.
8. Incentives should be given to teachers who are using technology in teaching.
9. Teachers need to be motivated to use ICT resources for professional development in academics also.

**6.6.3. Findings and Suggestions Related to ROT/SIT Facility under EDUSAT**

**a) Findings**

1. ROT/SIT facility under EDUSAT is not available in any school.

**b) Suggestions:**

1. EDUSAT-ROT/SIT facility need to be provided to all schools covered under ICT@ School Scheme.
2. Before creation EDUSAT facility in schools the following activities need to be taken up:
  - a) EDUSAT rooms need to established with proper space and sitting facilities
  - b) Headmasters/ICT teachers and subject teachers need to be trained to use EDUSAT based pedagogy.
  - c) Panels of experienced and innovative teachers be prepared for delivering EDUSAT based lessons.
  - d) Identified resource persons be provided orientation for use of EDUSAT facility in delivery of their lectures.



#### **6.4. Findings and Suggestions Relating to the Appointment and Training of ICT Teachers:**

##### **a) Findings:**

1. No separate computer teacher has been appointed in any school covered under ICT@School Scheme.
2. A teacher from within the school has been given the additional charge of ICT lab.
3. Only 53% of sample ICT teachers' in-charge of ICT have received training under SCERT.
4. The quality and duration of ICT training given to teachers is not adequate to integrate ICT in classroom teaching.

##### **b) Suggestions:**

1. Separate Computer/ICT teachers need to be appointed in every school.
2. Computer teachers should be given the responsibility of ICT training to both students and their own colleagues within the school.
3. The practice of giving additional charge of ICT to subject teachers needs to be stopped.
4. All teachers, who are holding additional charge of ICT education, need to be provided comprehensive training till the full time ICT teachers are appointed.
5. Quality, duration and frequency training given to ICT teachers need to be improved.
6. Computer teachers need to be motivated to develop E- content.

## **6.5. Findings and Suggestions Relating to the Use of ICT by Subject Teachers**

### **a) Findings**

1. Only 20% of subject teachers have been provided training on ICT.
2. Around 88% of subject teachers are with bachelor degree (B.A./B.Sc./B.Com) and the remaining 12% hold master degrees (M.A./M/Sc./M.Com).
3. Around 80% of subject teachers are professionally trained (B.Ed./M.Ed.).
4. Around 80% of sample teacher do not have access to internet facility in schools
5. Around 40% of sample teachers do not have their own Email ID.

## **6.6. Finding and Suggestions Related to Use of ICT Facilities by Schools**

### **a) Findings**

1. ICT facility is minimally used for testing, evaluation, communication, lesson planning, exploration of information by teachers
2. Computers were lying packed in many samples schools.
3. Teachers use computer only for routine matters No clear provision of ICT in school time table.
4. No log register maintained by any school for the use of ICT labs.

## **6.7. Issues that Need Immediate Attention**

1. Non availability of separate ICT teachers in schools covered under ICT@School Scheme.
2. Non availability of computers in many schools as per the norms of ICT @School Scheme.
3. Non availability of internet connection in large majority of schools.
4. Absence of ICT curriculum for secondary and higher secondary classes.
5. No slot for ICT education in majority of schools.

6. Large percentage of teachers subject teachers without any training in ICT.
7. Provision for quick repair and maintenance of computers and related technologies.
8. Non availability of computer labs, and generators for back up in a considerable percentage of schools.
9. Non availability of ROT/SIT facility under EDUSAT in all schools.

### **6.8. Major Observations of Evaluating Institute**

1. Outright Purchase was employed by the Nodal Department (SCERT).
2. Non availability of ICT teacher in the schools is one significant problem which hinders the successful implementation of the scheme.
3. Non availability of funds for maintenance of the hardware provided to the schools made the scheme as a liability rather than an asset to majority of the schools.
4. ICT which was no longer included in the High School syllabus hinders its successful implementation.
5. Training given to teachers was not enough to equip them with ICT knowledge that can be passed on to their students.
6. The number of computer sets supplied to the schools is not sufficient to meet their requirement as most of the schools have more than 30 students in each class.
7. Due to erratic power supply, majority of the schools that did not receive generators as back up could not optimally use their computer labs.
8. Internet connection using Broadband is not possible in some schools in some districts due to non-availability of the Broadband connection itself.
9. Non-availability of relevant software made it difficult for the teacher to use ICT for teaching-learning as they are not equipped with the knowledge of developing it.

### **6.9. Conclusion:**

From the findings of this evaluative report on ICT@School Scheme, it can be concluded that the health of this scheme in Mizoram is not good, as large percentage of schools covered under this scheme do not have adequate number of computers, internet connection, computer labs, and generators for back up supply. Besides, no school has been provided with a separate and duly qualified ICT teacher, and ROT/SIT facility under EDUSAT. Further, schools were hurriedly identified for supply of computers without even getting inputs from the concerned schools, whether they have the required space in for establishment of computers/ICT labs. The quality and duration of training provided to ICT and subject teachers is not adequate to integrate ICT with teaching learning processes. No ICT syllabus for high and higher secondary schools has yet been developed, and no time slot for computer/ICT class has been given by majority of schools in their time table. There is no mechanism in the state for monitoring and supervision of this scheme. The provisions created under the scheme are minimally used. A large majority of teachers and headmasters were found to be ignorant about the scheme, and were surprised to know from the members of field team of Evaluating Institute that all these computers are being provided by the Govt. of India under its ICT@School Scheme. In view of this sorry state of affairs in the implementation of ICT@School Scheme, it is strongly recommended that the state government should take initiatives for the rectification of the situation.